

## **John E. Tobiason, PhD, PE, BCEE**

Department of Civil and Environmental Engineering  
University of Massachusetts  
Amherst, MA 01003  
Telephone: (413) 545-5397  
Fax: (413) 545-2202  
tobiason@umass.edu

### **EDUCATION**

The Johns Hopkins University, Ph.D., 1987 (conferred 05/88)  
Department of Geography and Environmental Engineering

University of North Carolina at Chapel Hill, M.S.E.E., 1979  
Department of Environmental Sciences and Engineering  
Water Resources Engineering Program

University of New Hampshire, B.S., 1976  
Department of Civil Engineering, Environmental Option

### **HONORS AND AWARDS**

2018 US EPA Region I Environmental Merit Award for Children's Health (MassDEP/UMass project)  
UMass College of Engineering Outstanding Senior Faculty Award, 2015  
UMass CEE Department Faculty Research Award, 2013  
UMass CEE Department Advisory Council Faculty Service Award, 2012  
James L. Tighe Outstanding Teaching Award, UMass CEE Department Alumni, 2003, 2017  
American Water Works Association Research Division Annual Conference Best Poster Award, 2000  
American Water Works Association Publications Award, 1995  
University of Massachusetts, Outstanding Junior Faculty, Engineering Alumni Association, 1993  
Fulbright Award, three months research, Sweden, Summer, 1992  
Association of Environmental Engineering Professors CH2M-Hill Outstanding Dissertation Award, 1988  
American Water Works Association Abel Wolman Doctoral Fellowship, 1985  
Link Foundation Fellowship, 1984  
George C. Bunker Award for Outstanding Academic Achievement and Professional Promise, UNC, 1979  
B.S., Summa Cum Laude, UNH, 1976  
Phi Kappa Phi Honor Society, 1976  
Tau Beta Pi Honor Society, 1975

### **PROFESSIONAL POSITIONS**

9/03 - Professor, Department of Civil and Environmental Engineering, University of Massachusetts at Amherst  
9/18-12/18 Visiting Professor (sabbatical), Department of Civil and Environmental Engineering, Portland State University, Portland, OR  
9/10-11/10 Visiting Professor, Montana State University, Bozeman, MT, USA (5 weeks) and University of New South Wales, Sydney, Australia (5 weeks).  
9/03-12/03 Guest Professor (sabbatical), Swiss Federal Institute for Environmental Science and Technology (EAWAG), Dübendorf, Switzerland  
9/93-8/03 Associate Professor, CEE Dept., UMass-Amherst  
1/94-6/94 Visiting Researcher (sabbatical), Chalmers University of Technology, Göteborg, Sweden  
9/87-8/93 Assistant Professor, CEE Dept., UMass-Amherst  
8/83-8/87 Research Assistant, Department of Geography and Environmental Engineering, The Johns Hopkins University.

- 9/82-12/82 Instructor, Department of Civil Engineering, University of New Hampshire.  
 12/79-6/83 Project Engineer, G/Underwood Engineers, Inc. and Wright-Pierce Engineers & Architects, Portsmouth, New Hampshire.  
 9/77-5/79 Research Assistant, Department of Environmental Sciences and Engineering, University of North Carolina.

### **PROFESSIONAL**

Registered Professional Engineer, N.H. Reg. No. 5502  
 Board Certified Environmental Engineer, American Academy of Environmental Engineers & Scientists

### **Member:**

American Academy of Environmental Engineers and Scientists  
 American Chemical Society  
 American Society of Civil Engineers  
 American Water Works Association  
 Association of Environmental Engineering and Science Professors  
 Engineers Without Borders USA  
 International Water Association  
 New England Water Environment Association  
 New England Water Works Association  
 Water Environment Federation

### **Service on National Committees:**

- 2016 - 2018 American Academy of Environmental Engineers and Scientists, Board of Trustees  
 2011 - 2015 Association of Environmental Engineering and Science Professors, Board of Directors  
 2011 - 2018 Journal American Water Works Association Editorial Board  
 2001 - 2007 American Water Works Association - Water Science & Research Division Trustee  
 1994 - 2003 American Water Works Association - Academic Achievement Awards Committee  
 1990 - Standard Methods Committee on Particle Size Distribution Analysis  
 1992 - 2015 American Water Works Association - Particulate Contaminants Research Committee  
 1988 - 1995 American Water Works Association - Membrane Research Committee  
 1988 - 1992 American Water Works Association - Coagulation Research Committee  
 1991 - 1993 Association of Environmental Engineering Professors - PhD Dissertation Award Review Panel

### **PUBLICATIONS AND PRESENTATIONS**

#### **Journal Articles & Book Chapters:**

1. Lawler, D.F., O'Melia, C.R. and Tobiason, J.E., "Integral Water Treatment Plant Design: From Particle Size to Plant Performance," In Particulates in Water: Characterization, Fate, Effects, and Removal, Kavanaugh and Leckie, editors, Advances in Chemistry Series No. 189, American Chemical Society, Washington, D.C., 1980.
2. Tobiason, J.E. and O'Melia, C.R., "Physicochemical Aspects of Particle Removal in Depth Filtration," Journal American Water Works Association, Vol. 80, No. 12, pp. 54-64, 1988.
3. Tobiason, J.E., "Chemical Effects on the Deposition of Non-Brownian Particles", Colloids and Surfaces, Vol. 39, pp. 53-77, 1989.

4. Westerhoff, P.K. and Tobiason, J.E., "Effects of Flocculation on Direct Filtration", Journal of New England Water Works Association, Vol. 105, No. 2, pp. 95-109, 1991.
5. McEnroe, R.L., Tobiason, J.E. and Switzenbaum, M.S., "Effects of Ozonation and Direct Filtration on the Bacterial Growth Potential of Drinking Water", Journal New England Water Works Association, Vol. 106, No. 4, p. 244, 1992.
6. Tobiason, J.E., Edzwald, J.K., Schneider, O.D., Fox, M.B. and Dunn, H.J., "Pilot Study of the Effects of Ozone and PEROXONE on In-Line Direct Filtration", Journal American Water Works Association, Vol. 84, No. 12, pp. 72-84, 1992.
7. Tobiason, J.E., Johnson, G.S., Westerhoff, P.K. and Vigneswaran, B., "Particle Size and Chemical Effects on Contact Filtration Performance", Journal Environmental Engineering, Vol. 119, No. 3, pp. 520-539, 1993.
8. Tobiason, J.E., Edzwald, J.K., Reckhow, D.A. and Switzenbaum, M.S., "Effect of Pre-Ozonation on Organics Removal by In-Line Direct Filtration", Water Science and Technology, Vol. 27, No. 11, pp. 81-90, 1993.
9. Edwards, M., Benjamin, M.M. and Tobiason, J.E., "Effects of Ozonation on Coagulation Using Polymer Alone and Polymer/metal Salt Mixtures", Journal American Water Works Association, Vol. 86, No. 1, pp. 105-116, 1994.
10. Tobiason, J.E., and Vigneswaran, B., "Evaluation of a Modified Model for Deep Bed Filtration", Water Research, Vol. 28, No. 2, pp. 335-342, 1994.
11. Tobiason, J.E., "Optimal Use of Ozonation and GAC in Direct Filtration for Drinking Water Treatment", in Chemical Water and Wastewater Treatment III, R. Klute and H.H. Hahn, editors, Springer-Verlag, Berlin, pp. 155-171, 1994.
12. Schmidt, P.D., Tobiason, J.E., Edzwald, J.K. and Dunn, H., "DAF Treatment of a Reservoir Water Supply: Comparison with In-Line Direct Filtration and Control of Organic Matter", Water Science & Technology, Vol. 31, No. 3-4, pp.103-111, 1995.
13. Tobiason, J.E., Reckhow, D.A., and Edzwald, J.K., "Effects of Ozonation on Optimal Coagulant Dosing in Drinking Water Treatment", J Water SRT-Aqua, Vol. 44, No. 3, pp. 142-150, 1995.
14. Nocito-Gobel, J. and Tobiason, J.E., "Effects of Ionic Strength on Colloid Deposition and Release", Colloids and Surfaces A, Vol. 107, pp. 223-231, 1996.
15. McClellan, J.C., Reckhow, D.A., Tobiason, J.E., Edzwald, J.K. and Hess, A.F., "Empirical Models for Chlorination By-Products: Four Years of Pilot Experience in Southern Connecticut", in Disinfection By-Products and NOM Precursors: Chemistry, Characterization and Control, R.A. Minear & G.L. Amy, editors, ACS Symposium Series 649, American Chemical Society, Washington, D.C., pp. 26-47, 1996.
16. Valade, M.T., Edzwald, J.K., Tobiason, J.E., Dahlquist, J., Hedberg, T. and Amato, T., "Pretreatment Effects on Particle Removal by Flotation and Filtration", Journal American Water Works Association, Vol. 88, No. 12, pp. 35-47, 1996.
17. Dahlquist, J., Edzwald, J.K., Tobiason, J.E., Hedberg, T., Amato, T. and Valade, M.T., "High Rate Flocculation, Flotation and Filtration in Potable Water Treatment", in Chemical Water and Wastewater Treatment IV, H.H. Hahn, E. Hoffman and H. Ødegaard, Editors, Springer, New York, pp. 201-211, 1996.

18. Garvey, E., Tobiason, J.E., Hayes, M., Wolfram, E., Reckhow, D.A., and Male, J.W., "Coliform Transport in a Pristine Reservoir: Modeling and Field Studies", Water Science and Technology, Vol. 37, No. 2, pp. 137-144, 1998.
19. Edzwald, J.K. and Tobiason, J.E., "Enhanced versus Optimized Multiple Objective Coagulation", in Chemical Water and Wastewater Treatment V, H.H. Hahn, E. Hoffman and H. Ødegaard, Editors, Springer, New York, pp. 113-124, 1998.
20. Edzwald, J.K., Tobiason, J.E., Amato, T. and Maggi, L.J., "Integrating of High Rate DAF Technology into Plant Design", Journal American Water Works Association, Vol. 91, No. 12, pp. 41-53, 1999.
21. Edzwald, J.K. and Tobiason, J.E., "Enhanced Coagulation: US Requirements and a Broader View", Water Science and Technology, Vol. 40, No. 9, pp. 63-70, 1999.
22. McClellan, J.N., Reckhow, D.A., Tobiason, J.E., Edzwald, J.K. and Smith, D.A., "A Comprehensive Kinetic Model for Chlorine Decay and Chlorination By-Product Formation", Chapter 15 in Natural Organic Matter and Disinfection By-Products, edited by S. Barrett, S. Krasner and G. Amy, ACS Symposium Series 761, American Chemical Society, Washington, DC, pp. 223-246, 2000.
23. Schneider, O.D. and Tobiason, J.E., "Effects of Preozonation on Coagulant/Particle/NOM Interactions", Journal American Water Works Association, Vol. 92, No. 10, pp. 74-87, 2000.
24. Edzwald, J.K., Tobiason, J.E., Parento, L.M., Kelley, M.B., Kaminski, G.S., Dunn, H.J. and Galant, P.B., "*Giardia* and *Cryptosporidium* Removals by Clarification and Filtration Under Challenge Conditions", Journal American Water Works Association, Vol. 92, No. 12, pp. 70-84, 2000.
25. Amato, T., Edzwald, J.K., Tobiason, J.E., Dahlquist, J. and Hedberg, T., "An Integrated Approach to Dissolved Air Flotation", Water Science & Technology, Vol. 43, No. 8, pp. 19-26, 2001
26. Edzwald, J.K., Tobiason, J.E., Dunn, H.J., Kaminski, G.S. and Galant, P.B., "Removal and Fate of *Cryptosporidium* in Dissolved Air Drinking Water Plants", Water Science & Technology, Vol. 43, No. 8, pp. 51-57, 2001
27. Edzwald, J.K., Tobiason, J.E., "Fate and Removal of *Cryptosporidium* in a Dissolved Air Flotation Water Plant with and without Recycle of Waste Filter Backwash Water", Journal Water Science & Technology: Water Supply, Vol 2, No 2, pp 85-90, 2002.
28. Garvey, E. and Tobiason, J.E., "Assessment of Natural Organic Matter in Quabbin Reservoir", Journal of Water Supply: Research and Technology – AQUA, Vol. 52, No. 1, pp.19-36, 2003.
29. Edzwald, J.K., Tobiason, J.E., Udden, C., Kaminski, G.S., Dunn, H.J. and Galant, P.B., "Impacts of Recycle of Waste Filter Backwash on the Removal of *Cryptosporidium*", Journal of Water Supply: Research and Technology – AQUA, Vol. 52, No. 4, pp.243-258, 2003.
30. Tobiason, J.E., Edzwald, J.K., Gilani, V., Kaminski, G.S., Dunn, H.J. and Galant, P.B., "Effects of Waste Filter Backwash Recycle Operation on Clarification and Filtration", Journal of Water Supply: Research and Technology – AQUA, Vol. 52, No. 4, pp.259-276, 2003.
31. Tobiason, J.E., Edzwald, J.K., Levesque, B.R., Kaminski, G.S., Dunn, H.J. and Galant, P.B., "Full-Scale Assessment of the Impacts of Recycle of Waste Filter Backwash", Journal American Water Works Association, Vol. 95, No. 7, pp. 80-93, 2003.

32. Ahlfeld, D.P., Joaquin, A., Tobiason, J.E., and Mas, D., "Case Study: Impact of Reservoir Stratification on Interflow Travel Time", Journal of Hydraulic Engineering (ASCE), Vol. 129, No. 12, pp. 966-975, 2003.
33. Garvey, E. and Tobiason, J.E., "Relationships between Measures of Natural Organic Matter in Quabbin Watershed", Journal American Water Works Association, Vol. 95, No. 11, pp. 73-84, 2003.
34. Corbin, M.J., Reckhow, D.A., Tobiason, J.E., Dunn, H.J., and Kaminski, G.S., "Controlling DBPs by Delaying Chlorine Addition until after Filtration", Journal New England Water Works Association, Vol. 117, No. 4, pp. 243-251, 2003.
35. Kim, J. and Tobiason, J.E., "Particles in Filter Effluent: The Roles of Deposition and Detachment", Environmental Science & Technology, Vol. 38, No. 22, pp. 6132-6138, 2004.
36. Kim, J. and Tobiason, J.E., "Origins of Filter Effluent Particles: Experimental Study of Particle Deposition and Detachment", Water Science and Technology, Vol. 50, No. 12, pp. 215-222, 2004.
37. Persson, F., Långmark, J., Heinicke, G., Hedberg, T., Tobiason, J., Stenström, T. and Hermansson, M., "Characterisation of the behavior of particles in biofilters for pre-treatment of drinking water", Water Research, Vol. 39, No. 16, pp. 3791-3800, 2005.
38. Kennedy, M.G., Ahlfeld, D.P., Schmidt, D.P. and Tobiason, J.E., "Three Dimensional Modeling for Estimation of Hydraulic Retention Time in a Reservoir", Journal of Environmental Engineering (ASCE), Vol. 132, No. 9, pp. 976-984, 2006.
39. Mercer, K. and Tobiason, J.E., "Chemical Treatment for Management of Membrane Concentrate", in Chemical Water and Wastewater Treatment IX, H.H. Hahn, E. Hoffman and H. Ødegaard, editors. Proceedings of the 12<sup>th</sup> Gothenburg Symposium, 20-23 May, 2007, Ljubljana, Slovenia, IWA Publishing, London, pp. 307-315, 2007.
40. Mercer, K. and Tobiason, J.E., "Removal of Arsenic from High Ionic Strength Solutions: Effects of Ionic Strength, pH, and pre-formed versus in-situ formed HFO", Environmental Science & Technology, Vol. 42, No. 10, pp. 3797-3802, 2008
41. Knocke, W.R., Zuravnsky, L., Little, J.C. and Tobiason, J.E., "Adsorptive Contactors for Removing Soluble Manganese During Drinking Water Treatment", Journal American Water Works Association, Vol. 102, No. 8, pp. 64-75, 2010.
42. Islam, A., Goodwill, J., Bouchard, R., Tobiason, J.E. and Knocke, W.R., "Characterization of Filter Media MnO<sub>x</sub>(s) Surfaces and Mn Removal Capability", Journal American Water Works Association, Vol. 102, No. 9, pp. 71-83, 2010.
43. Edzwald, J.K. and Tobiason, J.E., "Chapter 3. Chemical Principles, Source Water Composition, and Watershed Protection", in Water Quality and Treatment: A Handbook on Drinking Water, 6th edition, J.K. Edzwald, editor, American Water Works Association, McGraw-Hill, 2011.
44. Tobiason, J.E., Cleasby, J.L., Logdson, G.S., and O'Melia, C.R., "Chapter 10. Granular Media Filtration", in Water Quality and Treatment: A Handbook on Drinking Water, 6th edition, J.K. Edzwald, editor, American Water Works Association, McGraw-Hill, 2011.
45. Nguyen, A.H., Tobiason, J.E., and Howe, K.J., "Fouling indices for low pressure membrane fouling assessment", Water Research, Vol. 45, No. 8, pp. 2627-2637, 2011.

46. W. R. Knocke and J. E. Tobiason, "Discussion of 'Filtration and manganese removal' by Geoff Hamilton, Barry Chiswell, John Terry, David Dixon and Lindsay Sly, 2013 *Journal of Water Supply: Research and Technology—AQUA* 62 (7), 417–425", *Journal of Water Supply: Research and Technology—AQUA* 63 (7), 596–598, 2013.
47. Jeznach, L.C, Tobiason, J.E., and Ahlfeld, D.P., "Modeling Conservative Contaminant Impacts on Reservoir Water Quality", *Journal American Water Works Association*, Vol. 106, No. 6, pp. E295-E306, 2014.
48. Bierlin, K., Knocke, W.R., Tobiason, J.E., Subramaniam, A., Pham, M. and Little, J.C., "Modeling Manganese Removal in a Pilot-scale Postfiltration Contactor", *Journal American Water Works Association*, Vol. 107, No. 2, pp. E109-E119, 2015.
49. Jeznach, L.C., and Tobiason, J.E., "Future climate effects on thermal stratification in the Wachusett Reservoir", *Journal American Water Works Association*, Vol. 107, No. 4, pp. E197-E209, 2015.  
<http://dx.doi.org/10.5942/jawwa.2015.107.0039>
50. Jiang, Y., Goodwill, J.G., Tobiason, J.E, and Reckhow, D.A., "Effect of Different Solutes, Natural Organic Matter, and Particulate Fe(III) on Ferrate(VI) Decomposition in Aqueous Solutions", *Environmental Science & Technology*, Vol. 49, pp. 2841-2848, 2015, DOI 10.1021/es505516w.
51. Goodwill, J.G., Jiang, Y., Reckhow, D.A., Gikonyo, J.G, and Tobiason, J.E, "Characterization of Particles from Ferrate Pre-oxidation", *Environmental Science & Technology*, Vol. 49, pp. 4955-4962, 2015. DOI: 10.1021/acs.est.5b00225
52. Jeznach, L.C., Jones, C., Matthews, T., Tobiason, J.E. and Ahlfeld, D.P., "A Framework for Modeling Contaminant Impacts on Reservoir Water Quality", *Journal of Hydrology*, Vol. 537, pp. 322-333, 2016.  
<http://dx.doi.org/10.1016/j.jhydrol.2016.03.041>
53. Goodwill, J.G., Jiang, Y., Reckhow, D.A., and Tobiason, J.E, "Laboratory assessment of ferrate for drinking water treatment", *Journal American Water Works Association*, Vol. 108, No.3, pp. E164-E174, 2016. doi:http://dx.doi.org/10.5942/jawwa.2016.108.0029
54. Jiang, Y., Goodwill, J.G., Tobiason, J.E, and Reckhow, D.A., "Impacts of ferrate oxidation on natural organic matter and disinfection byproduct precursors", *Water Research*, Vol. 96, pp 114-125, March 2016. doi:10.1016/j.watres.2016.03.052
55. Jiang, Y., Goodwill, J.G., Tobiason, J.E, and Reckhow, D.A., "Bromide Oxidation by Ferrate(VI): The Formation of Active Bromine and Bromate", *Water Research*, Vol. 96, pp 188-197, March 2016, doi:10.1016/j.watres.2016.03.065 .
56. Tobiason, J.E., Bazilio, A., Goodwill, J.G., Mai, X. and Nguyen, C., "Manganese Removal from Drinking Water Sources", *Current Pollution Reports*, 2016, 10.1007/s40726-016-0036-2.
57. Goodwill, J.G., Mai, X., Jiang, Y., Reckhow, D.A., and Tobiason, J.E, "Oxidation of Manganese(II) with Ferrate: Stoichiometry, Kinetics, Products and Impact of Organic Carbon", *Chemosphere*, Vol. 159, pp. 457-464, September 2016.
58. Bazilio, A. A., Kaminski, G. S., Larsen, Y., Mai, X., and Tobiason, J. E., 2016, "Full-Scale Implementation of a Second-Stage Contactor for Manganese Removal," *Journal American Water Works Association*, Vol 108, No. 12, pp E606-E614, December 2016.  
<http://dx.doi.org/10.5942/jawwa.2016.108.0184>

59. Hagemann, Jeznach, L.C., M., Tobiason, J.E., and Park, MH “Proactive modeling of water quality impacts of extreme precipitation events. Part 1: watershed and tributaries”, submitted to Journal Environmental Management, January 2017.
60. Jeznach, L.C., Hagemann, M., Park, MH, and Tobiason, J.E. “Proactive modeling of water quality impacts of extreme precipitation events in a drinking water reservoir”, Journal of Environmental Management, Vol. 201, pp. 241-251, 2017.
61. Jeznach, L.C., Mohan, A., Tobiason, J.E. and Reckhow, D.A. “Modeling Crude Oil Fate and Transport in Freshwater”, submitted to Journal Environmental Management, June 2018.
62. Jiang, Y., Goodwill, J.G., Tobiason, J.E, and Reckhow, D.A. “Comparison of ferrate and ozone pre-oxidation on disinfection byproduct formation from chlorination and chloramination” submitted to Water Research, September 2018.
63. Bazilio, A. A., Nguyễn, C., Mai, X. and Tobiason, J.E. “Adsorption of Natural Organic Matter and Disinfection Byproduct Formation in the Presence of Manganese Dioxide”, submitted to Water Research, September 2018.
64. “Bazilio, A. A., Nguyễn, C., Mai, X., Larsen, Y. and Tobiason, J.E. Impact of Manganese Oxide-coated Granular Filter Media on Disinfection Byproduct Formation”, submitted to Water Research, September 2018.
65. Burlingame, G.A., Bailey, C., Nelson, J., Arnette, V.J., Bradway, S. , HOLTHOUSE PUTZ, A.R., Stark, A. , Schwer, P., Sanborn, L.H., Tobiason, J.E., and Via, S. “Lessons Learned From Helping Schools Manage Lead in Drinking Water to Protect Children’s Health”, non-peer reviewed, Journal American Water Works Association, Vol 110, No. 110, pp 44-53 , October 2018.

#### **Conference Proceedings Papers:**

1. Tobiason, J.E. and O'Melia, C.R., “Lake Acidification and Pollutant Partitioning,” Proceedings of the First Annual Link Conference on Energy, Rochester, New York, June 1985.
2. Wang, Z., Tobiason, J.E. and O'Melia, C.R., “Chemical Aspects of Packed Bed Filtration in Water Treatment,” Proceedings of the 4th World Filtration Congress, Part I, edited by R. Vanbrabant, J. Hermia and R. A. Weiler, Ostend, Belgium, pp. 8.23-8.27, April 1986.
3. Tobiason, J.E., Reckhow, D.A., Edzwald, J.K., Franklin, K.M. and Paralakar, A.S., “Use of Ozone as an Aid to Coagulation/Filtration”, Proceedings of the Environmental Engineering Specialty Conference, American Society of Civil Engineers, Arlington, Virginia, edited by C.R. O'Melia, July 1990, pp. 525-531.
4. Tobiason, J.E., Johnson, G.S. and Westerhoff, P.K., “Particle Size and Filter Performance: Model Studies”, Proceedings of the Environmental Engineering Specialty Conference, American Society of Civil Engineers, Arlington, Virginia, edited by C.R. O'Melia, July 1990, pp. 733-739.
5. Westerhoff, P.K. and Tobiason, J.E., “The Effects of Flocculation on Direct Filtration Performance”, Proceedings of the Annual Conference, American Water Works Association, Philadelphia, PA, June 1991, p. 683.
6. Tobiason, J.E., Westerhoff, P.K., Johnson, G.S. and Vigneswaran, B., “Direct Filtration of Polydisperse Suspensions”, Advances in Filtration and Separation Technology, Volume 5, Separation Problems &

The Environment, B. Scheiner, editor, American Filtration Society, Gulf Publishing Company, Houston, 1992.

7. Reckhow, D.A., Tobiason, J.E., Switzenbaum, M.S., McEnroe, R.L., Xie, Y., Zhou, X. and Dunn, H., "Control of Disinfection Byproducts and AOC by Preozonation and Biologically-Active In-Line Direct Filtration", Proceedings of the Annual Conference, American Water Works Association, Vancouver, British Columbia, June 1992, pp. 487-503.
8. McEnroe, R.L., Tobiason, J.E. and Switzenbaum, M.S., "Reduction of the Bacterial Regrowth Potential with Preozonation and Biologically Active In-Line Direct Filtration", Proceedings of the Annual Conference, American Water Works Association, Vancouver, British Columbia, June 1992, pp. 447-456.
9. Tobiason, J.E. and Vinod, N.K., "Effects of Pre-Oxidation on In-Line Filtration: Particle and Manganese Removal", in Environmental Engineering, Saving a Threatened Resource-In search of Solutions, ed. by F.P. Linaweaver, Proceedings of Environmental Engineering Sessions at Water Forum 92, American Society of Civil Engineers, Baltimore, Maryland, August 1992, pp. 520-525.
10. Zhou, X., Reckhow, D.A. and Tobiason, J.E., "Formation and Removal of Aldehyde in Drinking Water Treatment Processes", Proceedings 1992 Water Quality Technology Conference, American Water Works Association, Toronto, Ontario, November 1992, pp. 291-315.
11. Reckhow, D.A., Xie, Y., McEnroe, R.L., Byrnes, P., Tobiason, J.E. and Switzenbaum, M.S., "The Use of Chemical Surrogates for Assimilable Organic Carbon", Proceedings of the Annual Conference, American Water Works Association, San Antonio, Texas, June 1993, Water Quality pp. 251-278.
12. Schneider, O.D., Tobiason, J.E., Reckhow, D.A. and Weiner, J.M., "A Bench Scale Evaluation of Oxidant Effects on the Treatment of a River Supply", Proceedings of the Annual Conference, American Water Works Association, San Antonio, Texas, June 1993, Water Research pp. 321-343.
13. Tobiason, J.E., Reckhow, D.A., and Edzwald, J.K., "Effects of Ozonation on Optimal Coagulant Dosing in Drinking Water Treatment", IWSA-IAWQ Joint Specialist Group Workshop on Optimal Dosing of Coagulants and Flocculants, Mülheim, Germany, January 1994.
14. Reckhow, D.A., Weiner, J.M., MacNeil, A. and Tobiason, J.E., "Effects of Preoxidation on the Rates of Formation of Chlorination Byproducts", Proceedings of the American Chemical Society 210<sup>th</sup> National Meeting, Environmental Chemistry Division Preprints, pp. 370-372, 1995.
15. McClellan, J.C., Reckhow, D.A. and Tobiason, J.E., "Removal of THM and HAA Precursors Using Ozone and Biologically Active GAC", Proceedings of the Annual Conference, American Water Works Association Annual Meeting, Toronto, Canada, June 1996.
16. Tobiason, J.E., Burns, M., Gaffney, L. and Schneider, O.D., "Particles in Filtered Waters: Effects of Backwash Remnants and Initial Filtration Rate", Proceedings of the Annual Conference, American Water Works Association Annual Meeting, Toronto, Canada, pp. 445-462, June 1996.
17. Tobiason, J.E., Burns, M., Gaffney, L. and Hess, A., "Particles in Filtered Waters: Effects of Physical and Chemical Operating Parameters", Proceedings of the Water Quality Technology Conference, American Water Works Association, Boston, Massachusetts, November 1996.
18. Tobiason, J.E., Edzwald, J.K., and Reckhow, D.A., "Optimizing and Improving Drinking Water Treatment Facilities: Use of Bench, Pilot and Full-Scale Studies", Proceedings of the IWSA/IAWQ International Conference, Upgrading of Water and Waste Water Systems, Kalmar, Sweden, May 1997.



19. Garvey, E., Tobiason, J.E., Hayes, M., Wolfram, E., Reckhow, D.A., and Male, J.W., "Coliform Transport in a Pristine Reservoir: Modeling and Field Studies", Proceedings of the IWSA/IAWQ Conference, Reservoir Management and Water Supply - An Integrated System, Prague, Czech Republic, May 1997.
20. Vigneswaran, B. and Tobiason, J.E., "Significance of the Volume of Deposit During Deep Bed Filtration", Proceedings of the American Water Works Association 1998 Annual Conference, Dallas, Texas, June 1998.
21. Reckhow, D.A., Tobiason, J.E., Pouvesle, W., McClellan, J.C., Edzwald, J.K. and Smith, D., "Evolution of Natural Organic Matter Through a Drinking Water Distribution System", Proceedings of the NOM Workshop, Poitiers, France, 18-19 September 1998, pp.20-1 to 20-4.
22. Levesque, B.R., Tobiason, J.E., Parmenter, W. and Edzwald, J.K., "Filter Backwash Recycle: Quality Characteristics and Impacts on Treatment", Proceedings of the 1999 American Water Works Association Annual Conference, Chicago, IL, June 1999.
23. Edzwald, J.K., Tobiason, J.E., Amato, T. and Maggi, L.J., "Integration of High Rate Dissolved Air Flotation Treatment Technology into Water Treatment Plant Design", Proceedings of the 1999 American Water Works Association Annual Conference, Chicago, IL, June 1999.
24. Edzwald, J.K., Tobiason, J.E., "Enhanced Coagulation: USA Requirements and a Broader View", IAWQ/IWSA Joint Specialist Group on Particle Separation International Conference, *Removal of Humic Substances from Water*, Trodheim, Norway, June 1999.
25. Tobiason, J.E., Edzwald, J.K., Amato, T. and Maggi, L.J., "Effects of Dissolved Air Flotation Hydraulic Loading Rate on Water Treatment Performance", *Environmental Engineering '99*, edited by G.C. Schafran, Proceedings of the 1999 ASCE-CSCE National Conference on Environmental Engineering, pp. 516-525, July 1999.
26. Edzwald, J.K., Tobiason, J.E., Parento, L.M., Kelley, M.B., Kaminski, G.S., Dunn, H.J. and Galant, P.B., "Clarification and Filtration Performance for Removal of *Giardia* and *Cryptosporidium*", Proceedings of the 1999 American Water Works Association Water Quality Technology Conference, Tampa, FL, November 1999.
27. Tobiason, J.E., Levesque, B.R., Edzwald, J.K., Kaminski, G.S., Dunn, H.J. and Galant, P.B., "Water Quality Impacts of Filter Backwash Recycle", Proceedings of the 1999 American Water Works Association Water Quality Technology Conference, Tampa, FL, November 1999.
28. Garvey, E.A. and Tobiason, J.E., "Natural Organic Matter Fate and Transport in an Oligotrophic Drinking Water Supply Reservoir", Proceedings of the American Water Works Association Annual Conference, Denver, Colorado, June, 2000.
29. Edzwald, J.K., Tobiason, J.E., Dunn, H.J., Kaminski, G.S. and Galant, P.B., "Removal and Fate of *Cryptosporidium* in Dissolved Air Flotation Drinking Water Plants", Proceedings of the 4<sup>th</sup> International Conference on Flotation in Water and Waste Water Treatment, Helsinki, Finland, September, 2000.
30. Amato, T., Edzwald, J.K., Tobiason, J.E., Dahlquist, J. and Hedberg, T., "DAF Rapide®: The Integrated Approach to Dissolved Air Flotation", Proceedings of the 4<sup>th</sup> International Conference on Flotation in Water and Waste Water Treatment, Helsinki, Finland, September, 2000.
31. Tobiason, J.E., Edzwald, J.K., Udden, C., Gilani, V., Kim, J., Kaminski, G., Dunn, H. and Galant, P., "Impacts of Filter Backwash Recycle on *Cryptosporidium* and Particle Removals by Clarification and

- Filtration”, in *Advances in Granular Filtration in Water Treatment*, Proceedings of the International Conference, Chartered Institution of Water and Environmental Management, London, UK, April, 2001, pp. 93-103.
32. Tobiason, J.E. and Kim, J., “Particles in Filter Effluent: Exploring the Roles of Removal and Detachment”, in *Advances in Granular Filtration in Water Treatment*, Proceedings of the International Conference, Chartered Institution of Water and Environmental Management, London, UK, April, 2001, pp. 361-369.
  33. Tobiason, J.E., Edzwald, J.K., Gilani, V., Kaminski, G., Dunn, H. and Galant, P., “Effects of Filter Backwash Recycle on Treatment Performance”, Proceedings of the American Water Works Association Annual Conference CD-ROM, Washington, DC, June, 2001.
  34. Edzwald, J.K. and Tobiason, J.E., “Fate and Removal of *Cryptosporidium* in a Dissolved Air Flotation Water Plant with and without Recycle of Waste Filter Backwash Water”, Proceedings of the International Water Association 2001 Berlin Water Congress, Berlin, Germany, October 2001.
  35. Kim, J. and Tobiason, J.E., “Origins of Filter Effluent Particles: Experimental Study of Particle Deposition and Detachment”, Proceedings of the International Water Association Conference, Nano- and Microparticles in Water and Wastewater Treatment, Zurich, Switzerland, September 2003.
  36. Roberts, M.G. and Tobiason, J.E., “NOM Modeling for an Oligotrophic Water Supply Reservoir”, Proceedings of the 2003 American Water Works Association Water Quality Technology Conference, Philadelphia, PA, November 2003.
  37. Buttrick, D., Tobiason, J.E. and Ahlfeld, D.P., “Modeling as an Operational Tool for an Unfiltered Surface Water Supply”, Proceedings of the American Water Works Association Annual Conference, CD-ROM, San Francisco, CA, June 2005.
  38. Edzwald, J.K., Tobiason, J.E. and Kelley, M.B., “Optimum Alum Coagulation Conditions for *Cryptosporidium* Removal”, Proceedings of the 2005 American Water Works Association Water Quality Technology Conference (CD only, 7 pp.), Quebec City, Quebec, Canada, November 2005.
  39. Tobiason, J.E., Ahlfeld, D.P., Rees, P.S., Reckhow, D.A. and S.C. Long. 2006. “Optimizing Water Supply Protection: Measurements, Models and Management”. Proceedings of “Safe Drinking Water: Where Science Meets Policy” Conference (CD only, 12 pp.), March 16-17, 2006, Chapel Hill, NC.
  40. Mercer, K.L. and Tobiason, J.E., “Treatment of Simulated Membrane Concentrate for Specific Pollutant Removal”, Proceedings of the World Environmental & Water Resources Congress 2007, EWRI of ASCE, 15-19 May 2007, Tampa, Florida.
  41. Mercer, K.L. and Tobiason, J.E., “Coagulation of Simulated High-Pressure Membrane Concentrates for Removal of Trace Pollutants”, Proceedings of the 2007 American Water Works Association Water Quality Technology Conference, Charlotte, North Carolina, November 2007.
  42. Tobiason, J.E., Mercer, K.L., and A.H. Nguyen, “Innovative Membrane Treatment of Waste Filter Backwash”, Proceedings of the 2007 American Water Works Association Water Quality Technology Conference, Charlotte, North Carolina, November 2007.
  43. Tobiason, J.E., Knocke, W.R., Islam, A.A., and J.E. Goodwill, “Control of Periodically Elevated Raw Water Manganese with Oxide Coated Media”, Proceedings of the 2007 American Water Works Association Water Quality Technology Conference, Charlotte, North Carolina, November 2007.

44. Mercer, K. and Tobiason, J.E., "Removal of Arsenic from Simulated High-Pressure Membrane Concentrates", Proceedings of the AWWA Inorganic Contaminants Workshop (CD), Albuquerque, New Mexico, January 27-29, 2008.
45. Mercer, K.L. and Tobiason, J.E., "Chemical Treatment for Arsenic Removal from Full-Scale High-Pressure Membrane Concentrates", Proceedings of the 2008 American Water Works Association Water Quality Technology Conference (CD), Cincinnati, Ohio, November 2008.
46. Tobiason, J.E., Russell, J., Islam, A.A. and Kaminski, G.S., "Simultaneous control of Mn, Fe, and DBPs for a Chlorinated Groundwater Source", Proceedings of the 2008 American Water Works Association Water Quality Technology Conference (CD), Cincinnati, Ohio, November 2008.
47. Nguyen, A.H. and Tobiason, J.E. "Impact of Model Organic Nitrogen Compounds on Fouling of Low Pressure Hollow Fiber Membranes", Proceedings of the 2009 American Water Works Association Membrane Technology Conference (CD), Memphis, TN, March 2009.
48. Mercer, K.L. and Tobiason, J.E., "Lime Treatment of BRO Concentrates", Proceedings of the 2009 American Water Works Association Membrane Technology Conference (CD), Memphis, TN, March 2009.
49. Laverty, M., Ahlfeld, D.P. and Tobiason, J.E., "Three-dimensional numerical modeling of hydrodynamics and transport in the Wachusett Reservoir", Proceedings of the ASCE EWRI World Environmental & Water Resources Congress 2010, Providence, RI, May 2010.
50. Stauber, C.S., Tobiason, J.E., Sojkowski, B., and Ahlfeld, D.P., "Two-Dimensional Modeling of Contaminant Spills to a Drinking Water Supply Reservoir", Proceedings of the ASCE EWRI World Environmental & Water Resources Congress 2010, Providence, RI, May 2010.

## **Reports**

1. Tobiason, J.E., "Packed Bed Filtration: Experimental Investigation and Conceptual Analysis of a Filter Ripening Model", unpublished Master of Science report, University of North Carolina, Chapel Hill, NC, 1979.
2. Tobiason, J.E. and O'Melia, C.R., "Filtration Performance in Water and Wastewater Treatment: Theory and Measurement," Water Resources Research Institute of the University of North Carolina, Report No. UNC-WRRI-82-172, 1982.
3. Tobiason, J.E., "Physicochemical Aspects of Particle Deposition in Porous Media", unpublished Ph.D. dissertation (Advisor: Charles R. O'Melia), Johns Hopkins University, 1987.
4. Johnson, G.S. and Tobiason, J.E., "Fundamental Aspects of Particle Deposition in Porous Media: Effects of Particle Size Distribution", final report for Engineering Foundation, Research Initiation Grant RI-A-88-2, 1990.
5. Tobiason, J.E., Edzwald, J.K., Schneider, O.D. and Fox, M.B., "Effects of Ozone and Peroxone on Direct Filtration", Summary Report for South Central Connecticut Regional Water Authority, December 1990.
6. Reckhow, D.A., Edzwald, J.K. and Tobiason, J.E., "Ozone as an Aid to Coagulation and Filtration", AWWA Research Foundation, American Water Works Association, Denver, Colorado, 1993.

7. Nocito-Gobel, J. and Tobiason, J.E., “Hydraulic Modeling of Tidal Estuary Bridge Crossings”, final report for the Massachusetts Highway Department, University of Massachusetts Transportation Center Report Number 94-3, 1994.
8. Edzwald, J.K. and Tobiason, J.E.. “Dissolved Air Flotation: Research on Flocculation and Filtration”, final report for Purac Ltd., Kidderminster, England, December 1995.
9. Tobiason, J.E., Male, J.W., Reckhow, D.A., Garvey, E., Hayes, M. and Wolfram, E., “Contaminant Transport Modeling and the Impact of Watershed Management Activities on Water Quality in Quabbin Reservoir”, final report to Metropolitan District Commission, May 1996.
10. Edzwald, J.K., Tobiason, J.E. and Walsh, C., “High Rate Dissolved Air Flotation Treatment Technology, Pilot Plant Study Report, Part 1: Newport News, Virginia, USA”, report to Purac Ltd. and Anglian Water Innovation, England, March 1998.
11. Bezbarua, B.K., Edzwald, J.K., Tobiason, J.E., Shelkova, E. and Levesque, B., “Coagulation Optimization for BHC Surface Water Supplies”, final report to BHC Company, Bridgeport, CT, April, 1998.
12. Tobiason, J.E., Garvey, E., Long, S.C., Male, J.W., Reckhow, D.A., Cheek, K. and Spieles, K., “Contaminant Transport Modeling and Water Quality in Quabbin Reservoir – Phase II”, final report to Metropolitan District Commission, August 1998.
13. Edzwald, J.K., Tobiason, J.E. and Maggi, L.J., “High Rate Dissolved Air Flotation Treatment Technology (DAFRapide™), Pilot Plant Study Report, Part 2: Bridgeport, CT, USA”, report to Purac Ltd. and Anglian Water Innovation, England, November 1998.
14. Reckhow, D.A, Tobiason, J.E., and Edzwald, J.K., “Evaluation of Organic Matter in the MWRA Drinking Water Distribution System”, Final Report prepared for Camp Dresser & McKee, Inc and the Massachusetts Water Resources Authority, July 1999.
15. McClellan, J.C., Reckhow, D.A., Tobiason, J.E. and Edzwald, J.K., “RWA/UMass DBP Kinetics/Distribution System Modeling Study, 1996-1999, Final Summary Report”, prepared for the South central Connecticut Regional Water Authority, New Haven, CT, USA, April 2000.
16. Garvey, E.A., Tobiason, J.E., Reckhow, D.A. and Edzwald, J.K., “Natural Organic Matter Fate and Transport in Quabbin Reservoir”, final report to Metropolitan District Commission, August 2001.
17. Edzwald, J.K., Tobiason, J.E., Kelley, M.B., Kaminski, G.S., Dunn, H.J. and Galant, P.B., “Impacts of Filter Backwash Recycle on Clarification and Filtration”, AWWARF and AWWA, Denver, CO, 287 pp., 2001.
18. Tobiason, J.E., Ahlfeld, D.P., Roberts, M. and Garvey, E.A., “Water Quality in MDC Reservoirs Project 1: Quabbin Reservoir Modeling”, final report to Metropolitan District Commission, January 2002.
19. Tobiason, J.E., Ahlfeld, D.P., Joaquin, A. and Mas, D., “Water Quality in MDC Reservoirs Project 1: Wachusett Reservoir Water Quality Modeling”, final report to Metropolitan District Commission, January 2002.
20. Ahlfeld, D.P., Tobiason, J.E., Kennedy, M. and Pease, R., “Water Quality in MDC Reservoirs: 2001-2003, Project 1: Wachusett Reservoir Water Quality Modeling”, final report to the MA Department of Conservation and Recreation, Division of Water Supply Protection, August 2003.

21. Tobiason, J.E., Knocke, W.R., Goodwill, J., Islam, A., Hargette, P., Bouchard, R and Zurvansky, L. (2008) "Characterization and Performance of Filter Media for Manganese Control", Awwa Research Foundation. Denver, Colorado.
22. Cornwell, D.A., Tobiason, J.E., and Brown, R. (2010) "Innovative Applications of Treatment Processes for Spent Filter Backwash", Awwa Research Foundation. Denver, Colorado.
23. Tobiason, J.E. and Nguyen, A. (2011) "Hollow Fiber Membrane Fouling: Characterization & Role of Organic Nitrogen", Water Research Foundation, Denver Colorado.
24. Larsen, Y. and Tobiason, J.E. (2011) "Chemical Treatment of Ion-Exchange Regenerant: Coagulation and Solid-Liquid Separation for Removal of Concentrated Pollutants", final report for Solano County Water Authority and MWH Engineers, California.
25. Brandhuber, P., Clark, S., Knocke, W. and Tobiason, J. (2013) "Guidance for the Treatment of Manganese", Water Research Foundation, Denver, Colorado.
26. Committee to Review the New York City Department of Environmental Protection Operations Support Tool for Water Supply [Knopman, D.S., Emelko, M.B., Freedman, P.L., Gilbert, J.B., Hirsch, R.M., Jones, K.L., Rosenzweig, C.E., Sklenar, K.S., Tobiason, J.E., Uber, J.G., Wood, E.F.] (2018) "Review of the New York City Department of Environmental Protection Operations Support Tool for Water Supply", Consensus Report of the National Academies of Science Engineering Medicine, National Academies Press, Washington, DC, USA.

## **Presentations**

### INVITED PRESENTATIONS

1. Tobiason, J.E. and O'Melia, C.R., "An Investigation of the Role of Suspended Particle Size in Direct Filtration," 37th Annual Meeting of the Chesapeake Section, American Water Works Association, Ocean City, Maryland, September 1985.
2. Tobiason, J.E., "Physicochemical Aspects of Particle Deposition in Porous Media", Syracuse University, Department of Civil Engineering seminar series, November, 1987.
3. Westerhoff, P.K. and Tobiason, J.E., "Effects of Flocculation on Direct Filtration", New England Water Works Association 109th Annual Meeting, Quebec City, Canada, October 1990.
4. Tobiason, J.E., Westerhoff, P.K., Johnson, G.S. and Vigneswaran, B., "Direct Filtration of Polydisperse Suspensions", American Filtration Society National Meeting, Atlanta, GA, October 1991.
5. McEnroe, R.L., Tobiason, J.E. and Switzenbaum, M.S., "Effects of Ozonation and Direct Filtration on the Bacterial Growth Potential of Drinking Water", New England Water Works Association 110th Annual Meeting, Mystic, CT, October, 1991.
6. Tobiason, J.E., seminars on Drinking Water Treatment, to Chalmers University of Technology (Göteborg, Sweden) Dept. of Sanitary Engineering and to the City of Gothenburg Water and Sewer Authority, summer 1992.
7. Tobiason, J.E., "Colloid Transport in the Subsurface", seminar for UMass Department of Chemistry, December 1992.

8. Springborg, D.C., Tobiason, J.E. and Reckhow, D.A., "Effects of Ozone and Biologically Active GAC on Haloacetic Acid Formation", New England Water Works Association 112th Annual Meeting, Burlington, Vermont, September 1993.
9. Tobiason, J.E., "Physicochemical Factors Impacting Colloid Transport in Porous Media", University of Connecticut Environmental Research Institute Environmental Colloquium seminar, November 17, 1993.
10. Tobiason, J.E., "Filtration for Particle Removal", presented at the Virginia Section - American Water Works Research Seminar, Williamsburg, Virginia, September 26, 1994.
11. Tobiason, J.E., "Placement of Ozonation and Granular Activated Carbon in Direct Filtration for Drinking Water Treatment", Analytical/Environmental seminar, University of Massachusetts – Lowell, February 27, 1995.
12. Schneider, O. D. and Tobiason, J.E., "Dynamics of the Oxidant-Induced Particle Destabilization Phenomenon", 114th Annual Conference of the New England Water Works Association, Bretton Woods, NH, September 20, 1995.
13. Tobiason, J.E., "Filtration & Filter Ripening: Particles & Principles", presented at the Virginia Section - American Water Works Research Seminar, Williamsburg, Virginia, September 1996.
14. Tobiason, J.E., "Filtration Principles", presented at the AWWA Sunday Workshop, Atlanta, Georgia, June 1997.
15. Tobiason, J.E. and Garvey, E., "Development of a Water Quality Model for the Quabbin Reservoir", New England Water Works Association meeting, Springfield, MA, January 1998.
16. Tobiason, J.E., "Particles in Water: Characterization and Removal by Granular Media Filtration", seminar at Worcester Polytechnic Institute, February 1998.
17. Maggi, L.J., Walsh, C.M., Edzwald, J.K. and Tobiason, J.E., "High Rate Dissolved Air Flotation Treatment Technology", New England Water Works Association Annual Meeting, Bretton Woods, NH, September 1998.
18. Tobiason, J.E., "Watershed Planning for the New Millenium", panel member, in UMass "First Watershed Conference on Watershed Protection: Addressing Biodiversity and Community Issues", May 1999.
19. Parento, L.M., Edzwald, J.K. and Tobiason, J.E., "Clarification and Filtration Performance for Removals of *Giardia* and *Cryptosporidium*", New England Water Works Association 118<sup>th</sup> Annual Meeting, Burlington, VT, September 1999.
20. Tobiason, J.E., "Water Quality Impacts of Filter Backwash Recycle", seminar for Massachusetts Department of Environmental Protection, Western District, Springfield, MA, November, 1999
21. Tobiason, J.E., "Particle and Pathogen Removal in Drinking water Treatment: Interaction between Clarification, Filtration and Backwash Recycle", seminar at University of Connecticut, Civil and Environmental Department, December, 1999.
22. Tobiason, J.E., "Impact of Filter Backwash Recycle on Water Quality", presented at the AWWA Sunday Workshop on Spent Filter Backwash Recycle, AWWA Annual Conference, Denver, CO, June 2000.

23. Tobiason, J.E., Edzwald, J.K., Dunn, H.J. and Kaminski, G.S., "Full-Scale Evaluation of Filter Backwash Recycle", American Water Works Association Research Foundation Technology Transfer Conferences, St. Louis, MO, July 2000 & Ft. Lee, NJ, November 2000.
24. Tobiason, J.E., Edzwald, J.K., Dunn, H.J. and Kaminski, G.S., "*Cryptosporidium* and *Giardia* Removals by Clarification and Filtration and Impacts of Filter Backwash Recycle", American Water Works Association Research Foundation Technology Transfer Conferences, St. Louis, MO, July 2000 & Ft. Lee, NJ, November 2000.
25. Tobiason, J.E., "Impact of Filter Backwash Recycle on Water Treatment Performance", seminar for Department of Civil Engineering, University of Waterloo, Canada, February 2001.
26. Tobiason, J.E., "Filter Backwash Recycle in Drinking Water Treatment", seminar for Water Environment Transport Department, Chalmers University of Technology, Göteborg, Sweden, March 2001.
27. Tobiason, J.E., "Impact of Filter Backwash Recycle on Treatment Performance", seminar at New England Water Works Association Symposium "Meeting Water Quality Challenges on the Horizon", May 15, 2001.
28. Tobiason, J.E., "Understanding the Effects of Recycle Operation on Treatment Performance", Sunday Workshop on Filter Backwash Recycle Rule Compliance, AWWA Annual Conference, New Orleans, LA, June 2002.
29. Tobiason, J.E., and Kim, J., "Particles & Pathogens in Filter Effluent: Origins & the Filter Cycle", AWWA Annual Conference, New Orleans, LA, June 2002.
30. Tobiason, J.E., "Impact of Backwash Recycling on Water Treatment Plant Performance", New York Section AWWA Tift Water Supply Symposium, Liverpool, New York, November 20, 2002.
31. Tobiason, J.E. and Kim, J., "Dynamics of Particle Attachment and Detachment in Media Filtration", poster presented at the EuroConference on "The Roles of Colloids and Particles in Water Technology", Acquafredda di Maratea, Italy, October 2003.
32. Tobiason, J.E. and Kim, J., "Origins of Particles in Granular Media Filter Effluent: Effects of Deposition and Detachment", seminar at Department of Inorganic, Analytical, and Applied Chemistry, University of Geneva, Switzerland, 1 December 2003.
33. Tobiason, J.E., "Natural Organic Matter in Drinking Water: Source and Treatment Considerations", seminar at Department of Water Quality Control, Institute for Environmental Technology, Technical University of Berlin, Germany, 5 December 2003.
34. Tobiason, J.E., "Natural Organic Matter in Drinking Water: Source and Treatment Considerations" and "Origins of Particles in Granular Media Filter Effluent: Effects of Deposition and Detachment", seminars at SINTEF Dept. of Water & Environment/ NTNU Dept. of Hydraulic and Environmental Engineering", Trondheim, Norway, January 2004.
35. Tobiason, J.E., "Natural Organic Matter in Drinking Water: Source and Treatment Considerations", seminar at Department of Geography and Environmental Engineering, Johns Hopkins University, Baltimore, MD, April 2004.
36. Tobiason, J.E., "Particle Characterization in Drinking Water Treatment: Implementation from Micro to Nano-Scale ?", AWWA Annual Conference, Orlando, FL, June 2004.

37. Tobiason, J.E., "Beredningsteknik, Internationella Trender, Strategier och Processval" (in Swedish), Seminar on Drinking Water, Chalmers University of Technology, Göteborg, Sweden, January 2005.
38. Tobiason, J.E., "Origins of Particles in Filtered Waters: Theory, Experiments and Practice", Department of Civil Engineering, Dalhousie University, Halifax, Nova Scotia, Canada, February 2005.
39. Tobiason, J.E., "Pretreatment/Filtration: Starting off on the Right Foot", New England Water Works Association Water Quality Symposium "The Reality of Integrated Water Treatment: Avoiding the Pitfalls", Boxborough, MA, May 19, 2005.
40. Tobiason, J.E., "Recycle Stream Impacts on Coagulation", presented at Sunday Workshop "Evaluating Water Quality Impacts on Coagulation Efficiency", AWWA Annual Conference, San Francisco, CA, June 2005.
41. Goodwill, J.E., Islam, A.A. and Tobiason, J.E., "Optimization of Manganese Uptake by Oxide Coated Media: Laboratory & Field Studies", presented at the New England Water Works Annual Conference, Rockport, Maine, September 2005.
42. Tobiason, J.E., "Manganese Removal: Focus on Uptake by Oxide-Coated Media", presented at Water Practice Meeting, Tighe & Bond, Inc., 26 September 2006.
43. Tobiason, J.E., "Mn Removal from Drinking Water: Oxidants, Surfaces & DBPs", presented to Dept. of Civil and Environmental Engineering, University of Wisconsin, Madison, WI, March 26, 2007.
44. Hedberg, T. and Tobiason, J.E., "Overview and Roll of Treatment in the Future", Seminarium om Dricksvatten Klimatförändringar – effekter och åtgärder (Seminar on drinking water and climate change), Chalmers Tekniska Högskola, Göteborg, (Sweden) 17 Januari 2008.
45. Tobiason, J.E., and Bondelind, M. , "Flotation: State of the Art and Numerical Modeling", Seminarium om Dricksvatten Klimatförändringar – effekter och åtgärder (Seminar on drinking water and climate change), Chalmers Tekniska Högskola, Göteborg, (Sweden) 17 Januari 2008.
46. Tobiason, J.E., "Chemical Treatment of Surface Waters", Surface Water Training Course, MA DEP Drinking Water Program, MA Rural Water Association, Westfield, MA, February 2008.
47. Tobiason, J.E. "DW Membrane Research: MF/UF Fouling, SFBW Treatment & Brine Treatment", 2008 American Water Works Association Water Quality Technology Conference, Cincinnati, Ohio, November 2008.
48. Tobiason, J.E., "FUNDAMENTALS OF PARTICLES AND FILTERS: REMOVAL x 2", Southeastern Regional Technology Transfer Conference, Greenville, South Carolina, January 29-30, 2009.
49. Tobiason, J.E., "APPLICATIONS OF MEDIA AND LOW PRESSURE MEMBRANE FILTRATION", Southeastern Regional Technology Transfer Conference, Greenville, South Carolina, January 29-30, 2009.
50. Tobiason, J.E., "Applied Drinking Water Research: University and Utility Collaborations", pre-conference workshop, New Jersey AWWA Annual Conference, Atlantic City, NJ, March 31, 2009.
51. Tobiason, J.E., "Physicochemical Aspects of Drinking Water Treatment", in the "What's Right Here in Physics" seminar series, Physics Department, Smith College, Northampton, MA, December 1, 2009.



52. Tobiason, J.E., "Control of Manganese and DBPs in Drinking Water: Challenges & Opportunities for Free Chlorine Disinfection Systems", Civil and Environmental Engineering Department seminar, Virginia Tech, Blacksburg, VA, March 19, 2010.
53. Tobiason, J.E., "Simultaneous control of Fe, Mn and DBPs for a challenging groundwater: physical, chemical and microbial aspects", Center for Biofilm Engineering, Montana State University, Bozeman, MT, September 16, 2010.
54. Tobiason, J.E., Larsen, Y., Pham, M. and Jenkins, C., "Removal of Trace Metals from Waste Ion Exchange Regenerant Brine", CA NV AWWA Section 90<sup>th</sup> Conference, Sacramento, CA, October 6, 2010.
55. Tobiason, J.E., "Simultaneous control of Fe, Mn and DBPs for a challenging groundwater: physical, chemical and microbial aspects", Faculty of Engineering, University of Technology Sydney, Australia, November 1, 2010.
56. Tobiason, J.E., "Overview of Research Experience", Siemens Water Technologies MEMCOR, South Windsor, NSW, Australia, November 2, 2010.
57. Tobiason, J.E., "Simultaneous control of Fe, Mn and DBPs for a challenging groundwater: physical, chemical and microbial aspects", Department of Civil and Environmental Engineering, University of New South Wales, Sydney, Australia, November 5, 2010.
58. Tobiason, J.E., "Overview of Research Experience", Orica Australia Pty Ltd, Melbourne, Victoria, Australia, November 8, 2010.
59. Tobiason, J.E., "Waste Regenerant Brine: Major Challenge for Ion Exchange", keynote lecture, International Water Association Leading Edge Technology Conference, Amsterdam, Netherlands, June 8, 2011.
60. Tobiason, J.E., "Integrated Control of Manganese and DBP Precursors", New York City Water Summit, Columbia University, Manhattan, NYC, April 2012.
61. Tobiason, J.E., "Manganese Control in Drinking Water Treatment: Preventing, Creating or Maintaining MnOx(s) Surfaces", Environmental Research Group Seminar, University of New Hampshire, October, 2012.
62. Tobiason, J.E., "Water Engineering Depth and Breadth: Legacy of DOGEE, Wolman (x 2), Geyer, & O'Melia", keynote lecture, Symposium on 75 Years of Sanitary and Environmental Engineering, Department of Geography and Environmental Engineering, Johns Hopkins University, Baltimore, MD, April, 2013.
63. Tobiason, J.E., "Beyond Secondary Compliance: Managing Manganese Control under Competing Treatment Objectives", New England Water Works Association 17<sup>th</sup> Annual Water Quality Symposium, Milford, MA, May 2015.
64. Tobiason, J.E., "Treatment Options for Control of Manganese: Use of Mn-Oxide Surfaces", oral presentation, AWWA Annual Conference, Anaheim, CA, June 2015.
65. Tobiason, J.E., "Occurrence of PFOS/PFOA", New England Water Works Association 135<sup>th</sup> Annual Conference, Providence, RI, September 2016.

66. Tobiason, J.E., "Controlling and Assessing Lead and Copper Concentrations in Consumed Drinking Water", New England Water Works Association Annual Laboratory Symposium, Holliston, MA, October 2016
67. Tobiason, J.E., "Implementation of Ferrate for Drinking Water Treatment: Opportunities & Challenges", Seminar in Department of Civil Engineering, L'Ecole Polytechnique, Montreal, Quebec, Canada, 11 April 2017.
68. Tobiason, J.E., "Assessment of Lead and Copper in Massachusetts Public School Drinking Water", New England Water Works Association 19<sup>th</sup> Annual Water Quality Symposium, Milford, MA, May 2017.
69. Tobiason, J.E., Reckhow, D.A., and Ram, K.R., "Assessment of Lead and Copper in Massachusetts Public School Drinking Water", 14th Annual EPA Drinking Water Workshop, Small Systems Challenges and Solutions, Cincinnati, OH August 22-24, 2017.
70. Tobiason, J.E., "Optimizing Iron and Manganese Removal", 14th Annual EPA Drinking Water Workshop, Small Systems Challenges and Solutions, Cincinnati, OH August 22-24, 2017.
71. Tobiason, J.E., "Assessment of Lead and Copper in Massachusetts School Drinking Water", seminar, Tufts University, Department of Civil and Environmental Engineering, Oct 24, 2017.
72. Tobiason, J.E., "Manganese and Iron control: The Critical Role of Particles and Surfaces", Symposium in Honor of Desmond Lawler, 255th American Chemical Society National Meeting, New Orleans, LA 19 March 2018.
73. Tobiason, J.E., "Fundamental Approaches for Effective Manganese (and Iron) Control", Association of Environmental Engineering and Science Professors (AEESP) keynote presentation, American Water Works Association Annual Conference and Exposition, Las Vegas, NV, June 12, 2018.
74. Tobiason, J.E., "Manganese in Drinking Water", 15th Annual EPA Drinking Water Workshop, Small Systems Challenges and Solutions, Covington, KY August 28-30, 2018.
75. Tobiason, J.E., and Brandhuber, J. P. "Iron and Manganese Control", 4-hr Hands-On Training Session, 15th Annual EPA Drinking Water Workshop, Small Systems Challenges and Solutions, Covington, KY August 28-30, 2018.
76. Tobiason, J.E., "Assessment of Lead and Copper in School Drinking Water", seminar, Oregon State University, School of Chemical, Biological and Environmental Engineering, September 24, 2018.
77. Tobiason, J.E., "Manganese and Iron Removal from Drinking Water Sources: Making Particles and Using Surfaces", Environmental and Water Resources Engineering Seminar Series, University of Texas, Austin, TX, October 23, 2018.
78. Tobiason, J.E., "Assessment of Lead and Copper in School Drinking Water", seminar, Portland State University, School of the Environment, Fall Seminar Series, November 29, 2018.

#### PRESENTATIONS – PEER-REVIEWED ABSTRACT ACCEPTANCE

1. Singer, P.C., O'Melia, C.R., Tobiason, J.E. and Dempsey, B.A., "Equilibrium Modeling of Trace Metals in Saginaw Bay," presented at 21st Conference on Great Lakes Research, Windsor, Ontario, May 1978.

2. Tobiason, J.E. and O'Melia, C.R., "Water and Wastewater Filtration; Experimental Investigation of a Filter Ripening Model," presented at the Annual Conference of the Water Pollution Control Federation, Houston, Texas, October 1979.
3. Wang, Z. and Tobiason, J.E., "Chemical Aspects of Deep Bed Filtration: The Role of Surface Chemistry," Poster Session, Workshop on Aquatic Surface Chemistry, Ermatingen, Switzerland, January 1986.
4. Tobiason, J.E., "Chemical Aspects of Particle Deposition in Depth Filtration," American Water Works Association Annual Conference, Kansas City, Missouri, June 1987.
5. Tobiason, J.E., "Chemical Effects on the Deposition of Non-Brownian Particles", Particle Deposition at the Solid-Liquid Interface Symposium, Society of Chemical Industry, University College London, September 1988.
6. Schneider, O.D., Fox, M.B., Tobiason, J.E. and Edzwald, J.K., "The Effect of Ozonation and Peroxonation on Direct Filtration Performance", American Water Works Association Annual Conference, Cincinnati, Ohio, June 1990.
7. Tobiason, J.E., Reckhow, D.A., Edzwald, J.K., Franklin, K.M. and Paralakar, A.S., "Use of Ozone as an Aid to Coagulation/Filtration", Environmental Engineering Specialty Conference, American Society of Civil Engineers, Arlington, Virginia, July 1990.
8. Tobiason, J.E., Johnson, G.S. and Westerhoff, P.K., "Particle Size and Filter Performance: Model Studies", Environmental Engineering Specialty Conference, American Society of Civil Engineers, Arlington, Virginia, July 1990.
9. Reckhow, D.A., Edzwald, J.K., Tobiason, J.E., Franklin, K., Paralkar, A., Walsh, J. and Baldwin, G., "Ozone as an Aid to Coagulation/Filtration: Role of Polyelectrolytes", American Water Works Association Annual Meeting, Philadelphia, PA, June 1991.
10. Westerhoff, P.K. and Tobiason, J.E., "The Effects of Flocculation on Direct Filtration Performance", American Water Works Association Annual Meeting, Philadelphia, PA, June 1991.
11. McEnroe, R.L., Tobiason, J.E. and Switzenbaum, M.S., "Reduction of the Bacterial Regrowth Potential with Preozonation and Biologically Active In-Line Direct Filtration", American Water Works Association Annual Meeting, Vancouver, British Columbia, June 1992.
12. Reckhow, D.A., Tobiason, J.E., Switzenbaum, M.S., McEnroe, R.L., Xie, Y., Zhou, X. and Dunn, H., "Control of Disinfection Byproducts and AOC by Preozonation and Biologically-Active In-Line Direct Filtration", American Water Works Association Annual Meeting, Vancouver, British Columbia, June 1992.
13. Tobiason, J.E. and Vinod, N.K., "Effects of Pre-Oxidation on In-Line Filtration: Particle and Manganese Removal", Water Forum 92, American Society of Civil Engineers, Baltimore, Maryland, August 1992.
14. Tobiason, J.E., Edzwald, J.K., Reckhow, D.A. and Switzenbaum, M.S., "Effect of Pre-Ozonation on Organics Removal by In-Line Direct Filtration", IAWPRC/IWSA Joint Specialist Group on Coagulation Conference (Control of Organic Material by Coagulation and Floc-Separation Processes), Geneva, Switzerland, September 1992.

15. Tobiason, J.E. and Nocito-Gobel, J., "Effects of Hydrodynamic Chromatography and Reversible Deposition on the Transport of Colloids in the Subsurface", Colloids in the Aquatic Environment, SCI sponsored International Symposium, University College London, September, 1992.
16. Zhou, X., Reckhow, D.A. and Tobiason, J.E., "Formation and Fate of Aldehydes in Drinking Water Treatment Processes", poster presentation, AWWA Water Quality Technology Conference, Toronto, Canada, November 1992.
17. Switzenbaum, M.S., McEnroe, R.M., Ayers, J.E., Schmidt, P.S., Edzwald, J.K., Tobiason, J.E. and Reckhow, D.A., "AOC Removal by Dissolved Air Flotation in Drinking Water Treatment", poster presentation, 1993 Conference on Water Quality in the Western Hemisphere, American Society for Microbiology, San Juan, Puerto, Rico, April 17-20, 1993.
18. Schneider, O.D., Tobiason, J.E., Reckhow, D.A. and Weiner, J., "A Bench Scale Evaluation of Oxidant Effects on a River Supply", Research Division Poster Session, American Water Works Association Annual Meeting, San Antonio, Texas, June 1993.
19. Reckhow, D.A., Xie, Y., McEnroe, R.L., Jaeger, P.B., Tobiason, J.E. and Switzenbaum, M.S., "The Use of Chemical Surrogates for Assimilable Organic Carbon", American Water Works Association Annual Meeting, San Antonio, Texas, June 1993.
20. Tobiason, J.E., McEnroe, R.L., Vinod, N.K., Reckhow, D.A., Switzenbaum, M.S. and Dunn, H.J., "Placement of Ozonation and Biologically Active GAC for Direct Filtration", American Water Works Association Annual Meeting, San Antonio, Texas, June 1993.
21. Tobiason, J.E., Reckhow, D.A., and Edzwald, J.K., "Effects of Ozonation on Optimal Coagulant Dosing in Drinking Water Treatment", IWSA-IAWQ Joint Specialist Group Workshop on Optimal Dosing of Coagulants and Flocculants, Mülheim, Germany, January 1994.
22. Schmidt, P.D., Tobiason, J.E. and Edzwald, J.K., "DAF Treatment of a Reservoir Water Supply: Comparison with In-Line Direct Filtration and Control of Organic Matter", IAWQ-IWSA-AWWA Joint Specialised Conference on Flotation Processes in Water and Sludge Treatment, Orlando, Florida, USA, April 1994.
23. Schmidt, P.D., Tobiason, J.E., Edzwald, J.K. and Dunn H., "Dissolved Air Flotation for Drinking Water Treatment: Pilot Scale Investigation of Process Variables", American Water Works Association Annual Meeting, New York, New York, June 1994.
24. Tobiason, J.E., "Optimal Use of Ozonation and GAC in Direct Filtration for Drinking Water Treatment", 6th International Gothenburg Symposium on Chemical Treatment, Göteborg, Sweden, June, 1994.
25. Nocito-Gobel, J. and Tobiason, J.E., "Effects of Ionic Strength on Colloid Deposition and Release", 209th American Chemical Society National Meeting, Anaheim, CA, April, 1995.
26. Tobiason, J.E. and Dunn, H., "Integrated Assessment of Upgrading Direct Filtration with Ozonation and GAC", American Water Works Association Annual Meeting, Anaheim, CA, June 1995.
27. Schneider, O. D. and Tobiason, J.E., "The Effects of Oxidant Contact Time on Particle-Organic Interactions", presented at the American Water Works Association Annual Conference, Toronto, Canada, June 1996.

28. Tobiason, J.E., Edzwald, J.K., and Reckhow, D.A., "Optimizing and Improving Drinking Water Treatment Facilities: Use of Bench, Pilot and Full-Scale Studies", presented at the IWSA/IAWQ International Conference, Upgrading of Water and Waste Water Systems, Kalmar, Sweden, May 1997.
29. Gaffney, L.J., Tobiason, J.E. and Edzwald, J.K., "Coagulation Optimization to Meet Multiple Treatment Objectives", poster presented at the American Water Works Association Annual Conference, Atlanta, GA, June 1997.
30. Bullock, S., Edzwald, J.K., Tobiason, J.E., Dunn, H., Kaminski, G. and Galant, P., "Full-Scale Flotation Plant Performance From Bench-Scale Tests", poster presented at the American Water Works Association Annual Conference, Atlanta, GA, June 1997.
31. Tobiason, J.E. and Burns, M.J., "Effects of Process Type & Operation on Particle Counts", presented at Water Quality Technology Conference, American Water Works Association, Denver, Colorado, November 1997.
32. Vigneswaran, B. and Tobiason, J.E., "Significance of the Volume of Deposit During Deep Bed Filtration", presented at the American Water Works Association 1998 Annual Conference, Dallas, Texas, June 1998.
33. Edzwald, J.K., Tobiason, J.E., Shelkova, E., Bezbarua, B., Kaminski, G.S. and Dunn, H.J., "Enhanced Coagulation Versus Multi-Objective Coagulation Optimization", presented at the American Water Works Association 1998 Annual Conference, Dallas, Texas, June 1998.
34. Edzwald, J.K., Tobiason, J.E., "Enhanced Versus Optimized Multiple Objective Coagulation", presented at 8<sup>th</sup> Gothenburg Symposium on Chemical Water and Wastewater Treatment, Prague, Czech Republic, September 1998.
35. Garvey, E. and Tobiason, J.E., "Fate and Transport of Organic Matter in an Oligotrophic Reservoir", presented at North American Lake Management Society 18<sup>th</sup> International Symposium, Banff, Alberta, Canada, November 1998.
36. Levesque, B.R., Tobiason, J.E., Parmenter, W. and Edzwald, J.K., "Filter Backwash Recycle: Quality Characteristics and Impacts on Treatment", presented at the 1999 American Water Works Association Annual Conference, Chicago, IL, June 1999.
37. Edzwald, J.K., Tobiason, J.E., Amato, T. and Maggi, L.J., "Integration of High Rate Dissolved Air Flotation Treatment Technology into Water Treatment Plant Design", presented at the 1999 American Water Works Association Annual Conference, Chicago, IL, June 1999.
38. Edzwald, J.K., Tobiason, J.E., "Enhanced Coagulation: USA Requirements and a Broader View", presented at the IAWQ/IWSA Joint Specialist Group on Particle Separation International Conference, *Removal of Humic Substances from Water*, Trodheim, Norway, June 1999.
39. Tobiason, J.E., Edzwald, J.K., Amato, T. and Maggi, L.J., "Effects of Dissolved Air Flotation Hydraulic Loading Rate on Water Treatment Performance", presented at the 1999 ASCE-CSCE National Conference on Environmental Engineering, Norfolk, VA, July 1999.
40. Tobiason, J.E., Levesque, B.R., Edzwald, J.K., Kaminski, G.S., Dunn, H.J. and Galant, P.B., "Water Quality Impacts of Filter Backwash Recycle", presented at the American Water Works Association Water Quality Technology Conference, Tampa, FL, November 1999.
41. Tobiason, J.E., "Filtration, An Emerging Technology?", presented at the American Water Works Association Water Quality Technology Conference, Tampa, FL, November 1999.

42. Hodgkins, L., Reckhow, D.A., Tobiason, J.E., Edzwald, J.K., Seckinger, S. and Toolan, T., "Measurement and Characterization of Biodegradable Dissolved Organic Carbon in the MWRA Drinking Water Supply and Distribution System", presented at the American Water Works Association Water Quality Technology Conference, Tampa, FL, November 1999.
43. Edzwald, J.K., Tobiason, J.E., Parento, L.M., Kelley, M.B., Kaminski, G.S., Dunn, H.J. and Galant, P.B., "Clarification and Filtration Performance for Removal of *Giardia* and *Cryptosporidium*", presented at the American Water Works Association Water Quality Technology Conference, Tampa, FL, November 1999.
44. Garvey, E.A. and Tobiason, J.E., "Natural Organic Matter Fate and Transport in an Oligotrophic Drinking Water Supply Reservoir", presented at the American Water Works Association Annual Conference, Denver, Colorado, June, 2000.
45. Parento, L.M., Edzwald, J.K. and Tobiason, J.E., "Clarification and Filtration Performance for the Removal of *Giardia* and *Cryptosporidium*", poster presented at the American Water Works Association Annual Conference, Denver, Colorado, June, 2000.
46. Tobiason, J.E. and Kim, J., "Colloid Detachment in Flow Through Porous Media: Fundamental Mechanisms and Application Impacts", presented at the American Chemical Society 74<sup>th</sup> Colloid and Surface Science Symposium, Colloid 2000, , Lehigh University, Bethlehem, PA, June 2000.
47. Edzwald, J.K., Tobiason, J.E., Dunn, H.J., Kaminski, G.S. and Galant, P.B., "Removal and Fate of *Cryptosporidium* in Dissolved Air Flotation Drinking Water Plants", presented at the 4<sup>th</sup> International Conference on Flotation in Water and Waste Water Treatment, Helsinki, Finland, September, 2000.
48. Amato, T., Edzwald, J.K., Tobiason, J.E., Dahlquist, J. and Hedberg, T., "DAF Rapide®: The Integrated Approach to Dissolved Air Flotation", presented at the 4<sup>th</sup> International Conference on Flotation in Water and Waste Water Treatment, Helsinki, Finland, September, 2000.
49. Tobiason, J.E., Edzwald, J.K., Udden, C., Gilani, V., Kim, J., Kaminski, G., Dunn, H. and Galant, P., "Impacts of Filter Backwash Recycle on *Cryptosporidium* and Particle Removals by Clarification and Filtration", presented at the *Advances in Granular Filtration in Water Treatment* International Conference, Chartered Institution of Water and Environmental Management, London, UK, April, 2001.
50. Tobiason, J.E. and Kim, J., "Particles in Filter Effluent: Exploring the Roles of Removal and Detachment", poster presentation, *Advances in Granular Filtration in Water Treatment* International Conference, Chartered Institution of Water and Environmental Management, London, UK, April, 2001.
51. Ahlfeld, D.P., Joaquin, A.L., Tobiason, J.E. and Mas, D.M., "Modeling Migration of Transferred Water Through a Thermally Stratified Reservoir", poster presentation, National Meeting of the American Geophysical Union, Boston, MA, May, 2001.
52. Tobiason, J.E., Edzwald, J.K., Gilani, V., Kaminski, G., Dunn, H. and Galant, P., "Effects of Filter Backwash Recycle on Treatment Performance", oral presentation, American Water Works Association Annual Conference, Washington, DC, June, 2001.
53. Edzwald, J.K. and Tobiason, J.E., "Fate and Removal of *Cryptosporidium* in a Dissolved Air Flotation Water Plant with and without Recycle of Waste Filter Backwash Water", oral presentation, International Water Association 2001 Berlin Water Congress, Berlin, Germany, October 2001.

54. Garvey, E.A. and Tobiason, J.E., "Modeling the Fate of Fecal Coliform from Roosting Gulls: Implications for Gull Management Activities at Quabbin Reservoir", oral presentation, New England Water Environment Association Watershed Management Specialty Seminar, Milford, MA, May, 2003.
55. Tobiason, J.E. and Kim, J., "Origins of Filter Effluent Particles: Experimental Study of Particle Deposition and Detachment", oral presentation, International Water Association Conference, Nano- and Microparticles in Water and Wastewater Treatment, Zurich, Switzerland, September 2003.
56. Roberts, M.G. and Tobiason, J.E., "NOM Modeling for an Oligotrophic Water Supply Reservoir", oral presentation, 2003 American Water Works Association Water Quality Technology Conference, Philadelphia, PA, November 2003.
57. Kim, J. and Tobiason, J.E., "Particle Deposition and Detachment During Initial Phase of Granular Media Filtration", oral presentation at 78<sup>th</sup> ACS Colloid and Surface Science Symposium, New Haven, CT, June 2004.
58. Tobiason, J.E. and Kim, J., "Deposition, Detachment and Dynamics in Media Filtration", oral presentation at 228<sup>th</sup> American Chemical Society National Meeting, Division of Environmental Chemistry, Philadelphia, PA, August 2004.
59. Buttrick, D., Tobiason, J.E. and Ahlfeld, D.P., "Modeling as an Operational Tool for an Unfiltered Surface Water Supply", oral presentation, American Water Works Association Annual Conference, San Francisco, CA, June 2005.
60. Schmidt, D., Frain, M., Kennedy, M., Tobiason, J. And Ahlfeld, D., "Securing the Water Supply", oral presentation, 21<sup>st</sup> Annual International Conference on Soils, Sediments and Water, University of Massachusetts, Amherst, MA, October 2005.
61. Frain, M., Ahlfeld, D.P., Tobiason, J.E., and Schmidt, D., "Computational Modeling of Species Contaminant Dispersal and Residence Time in the Thomas Basin of the Wachusett Reservoir", poster presentation, 3<sup>rd</sup> Annual Water Resources research Conference, University of Massachusetts, Amherst, MA, October 2005.
62. Knocke, W.R., Tobiason, J.E., Gabelich, C. and Coffey, B., "Fate of Manganese in Oxide-Coated Media Filtration Systems", oral presentation, AWWA Inorganic Contaminants Workshop, Austin, Texas, January 2006.
63. Tobiason, J.E., Ahlfeld, D.P., Rees, P.S., Reckhow, D.A. and S.C. Long. 2006. "Optimizing Water Supply Protection: Measurements, Models and Management". oral presentation at the conference Safe Drinking Water: Where Science Meets Policy. March 16-17, 2006, Chapel Hill, NC.
64. Islam, A.A., Goodwill, J.E., Tobiason, J.E., and Knocke, W.R., "Manganese Removal by Oxide Coatings: Media Characterization and Optimization of Operational Variables", oral presentation, American Water Works Association Annual Conference, San Antonio, Texas, June 2006.
65. Olson, S., Cappucci, L., Tobiason, J.E. and Ford, R., "Pilot-Scale Comparison of Direct Coagulation Membrane Filtration to DAF Pre-Treatment for Three Membrane Systems", oral presentation, American Water Works Association Annual Conference, San Antonio, Texas, June 2006.
66. Knocke, W.R., Zuravnsky, L., Little, J. and Tobiason, J.E., "Development of Soluble Manganese Sorptive Contactors for Enhancing Potable Water Treatment Practices", oral presentation, American Water Works Association Water Quality Technology Conference, Denver, Colorado, November 2006.

67. Goodwill, J.E., Islam, A.A., Tobiason, J.E., and Knocke, W.R., "Characterization of Manganese Oxide Coated Filter Media", oral presentation, American Water Works Association Water Quality Technology Conference, Denver, Colorado, November 2006.
68. Mercer, K.L. and Tobiason, J.E., "Chemical Treatment for Management of Membrane Concentrate", poster presentation, American Water Works Association Water Quality Technology Conference, Denver, Colorado, November 2006.
69. Tobiason, J.E., Knocke, W.R., Goodwill, J.E., Islam, A.A., Bouchard, R., Zuravnsky, L. and Hargette, P., "Characterization and Performance of Filter Media for Manganese Removal", oral presentation, American Water Works Association Annual Conference, Toronto, Canada, June 2007.
70. Tobiason, J.E. and Ahlfeld, D.P., "Hydrodynamic and Water Quality Modelling for Watershed and Reservoir Management", oral presentation, 2007 New York City Watershed Science & Technical Conference, West Point, New York, September 2007.
71. Russell, J. and Tobiason, J.E., "Control of Manganese, Iron, and Disinfection Byproducts for a Groundwater Supply", oral presentation, American Water Works Association Annual Conference, Atlanta, GA, June 2008.
72. Mercer, K.L. and Tobiason, J.E., "Chemical Treatment of High Pressure Membrane Concentrate", poster presentation, International Water Association Leading Edge Technologies Conference, Zurich, Switzerland, June 1-4, 2008.
73. Mercer, K.L. and Tobiason, J.E., "Chemical Treatment for Arsenic Removal from Full-Scale High-Pressure Membrane Concentrates", oral presentation, 2008 American Water Works Association Water Quality Technology Conference, Cincinnati, Ohio, November 2008.
74. Tobiason, J.E., Russell, J., Islam, A.A. and Kaminski, G.S., "Simultaneous control of Mn, Fe, and DBPs for a Chlorinated Groundwater Source", oral presentation, 2008 American Water Works Association Water Quality Technology Conference, Cincinnati, Ohio, November 2008.
75. Nguyen, A.H. and Tobiason, J.E. "Impact of Model Organic Nitrogen Compounds on Fouling of Low Pressure Hollow Fiber Membranes", oral presentation, 2009 American Water Works Association Membrane Technology Conference, Memphis, TN, March 2009.
76. Mercer, K.L. and Tobiason, J.E., "Lime Treatment of BRO Concentrates", oral presentation, 2009 American Water Works Association Membrane Technology Conference, Memphis, TN, March 2009.
77. Nguyen, A.H. and Tobiason, J.E. "Fouling of Low-Pressure Hollow-Fiber Membranes: A Bench-Scale Study", oral presentation, 2009 American Water Works Association Annual Conference, San Diego, CA, June 2009.
78. Islam, A.A., Tobiason, J.E., Russell, J. and Kaminski, G. "Investigation of Manganese Release from Full-Scale Filter Media", oral presentation, 2009 American Water Works Association Annual Conference, San Diego, CA, June 2009.
79. Islam, A.A., Tobiason, J.E. and Kaminski, G. "Application of HPSEC-UV followed by ICP-MS to Investigate Manganese-NOM Complexation/Interaction", oral presentation, 2009 AWWA Water Quality Technology Conference, Seattle, WA, November 2009.



80. Knocke, W.R. and Tobiason, J.E., "Working Towards an Improved Understanding of Manganese Control Issues in Drinking Water Treatment", oral presentation, AWWA Inorganic Contaminants Workshop, Denver, CO, March 2010.
81. Tobiason, J.E., Pham, M. and Larsen, Y., "Removal of Trace Contaminants from Waste Ion Exchange Brine", oral presentation, AWWA Inorganic Contaminants Workshop, Denver, CO, March 2010.
82. Lavery, M., Ahlfeld, D.P. and Tobiason, J.E., "Three-dimensional numerical modeling of hydrodynamics and transport in the Wachusett Reservoir", oral presentation, ASCE EWRI World Environmental & Water Resources Congress 2010, Providence, RI, May 2010.
83. Stauber, C.S., Tobiason, J.E., Sojkowski, B., and Ahlfeld, D.P., "Two-Dimensional Modeling of Contaminant Spills to a Drinking Water Supply Reservoir", oral presentation, ASCE EWRI World Environmental & Water Resources Congress 2010, Providence, RI, May 2010.
84. Tobiason, J.E., Pham, M. and Larsen, Y., and Kaminski, G., "Two-Stage Groundwater Filtration for Control of Manganese and DBPs", oral presentation, ASCE EWRI World Environmental & Water Resources Congress 2010, Providence, RI, May 2010.
85. Nguyen, A. and Tobiason, J.E., "Fouling of PVdF Low Pressure Hollow Fiber Membranes for Natural Surface Water Treatment: Membrane Performance Assessment and Surface Characterization", poster presentation, International Water Association Leading Edge Technology Conference, Phoenix, Arizona, June 2010.
86. Tobiason, J.E., Larsen, Y, Pham, M. and Mercer, K., "Chemical Treatment of Waste Brines", oral presentation, AWWA Annual Conference, Chicago, Illinois, June, 2010.
87. Nguyen, A. and Tobiason, J.E., "Fouling of PVdF low pressure hollow fiber membranes in natural surface water treatment: performance assessment and surface characterization", oral presentation, AWWA Annual Conference, Chicago, Illinois, June, 2010.
88. W.R. Knocke, Tobiason, J.E., Subramanian, A., Pham, M., Gallagher, D., Little, J. and Hawkins, R., "Demonstrating the Use of Post-Filter  $MnO_{x(s)}$ -Based Adsorptive Contactors for Effective Manganese Control", oral presentation, AWWA Annual Conference, Chicago, Illinois, June, 2010.
89. Tobiason, J.E., Pham, M. and Larsen, Y., "Removal of As, Se, Cu and Cr from Waste Ion Exchange Brine by *in situ* Ferric Hydroxide Precipitation", oral presentation, 240<sup>th</sup> American Chemical Society National Meeting, Boston, MA, August 2010.
90. Tobiason, J.E. and Nguyen, A., "Surface characterization of fouled PVDF based hollow fiber membranes used in drinking water treatment", poster presentation, 240<sup>th</sup> American Chemical Society National Meeting, Boston, MA, August 2010.
91. Nguyen, A. and Tobiason, J.E., "Fouling Evaluation for LPHF Membranes by Natural Waters through Extensive Bench-Scale Testing", oral presentation, 2010 International Water Association World Water Congress and Exhibition, Montreal, Quebec, Canada, September 2010.
92. Larsen, Y., Pham, M., and Tobiason, J.E., "Waste Ion Exchange Brine Treatment and Removal of Trace Contaminants", oral presentation, 2010 AWWA Water Quality Technology Conference, Savannah, Georgia, November 2010.

93. Pham, M., Larsen, Y., Tobiason, J.E. and Kaminski, G., "Manganese Removal and DBP Control by Two-Stage Groundwater Filtration", poster presentation, 2010 AWWA Water Quality Technology Conference, Savannah, Georgia, November 2010.
94. Nguyen, A.H. and Tobiason, J.E., "Reversible/Irreversible Fouling of Low Pressure Membranes in Drinking Water Treatment", oral presentation, AWWA 2011 Membrane Technology Conference, Long Beach, California, March 2011.
95. Larsen, Y., Pham, M., Jenkins, C. and Tobiason, J.E., "Waste Ion Exchange Brine Treatment and Removal of Trace Contaminants Using Coagulation", poster presentation, International Water Association Leading Edge Technology Conference, Amsterdam, Netherlands, June 2011.
96. Tobiason, J.E., "Second Stage High-Rate Contactor Implementation for Manganese and DBP Control", poster presentation, 2011 AWWA Water Quality Technology Conference, Phoenix, Arizona, November 2011.
97. Larsen, Y., Pham, M., Jenkins, C., and Tobiason, J.E., "Waste Ion Exchange Brine Treatment and Removal of Trace Contaminants Using Coagulation", poster presentation, 2011 AWWA Water Quality Technology Conference, Phoenix, Arizona, November 2011.
98. Chihoski, J., Tobiason, J.E. and Kaminski, G., "Evaluation of Second Stage Contactor Media for Manganese Removal", oral presentation, AWWA Annual Conference, Dallas, Texas, June, 2012.
99. Volpe, D., Tobiason, J.E. and Kaminski, G., "Assessment of Iron and Manganese Sequestration", oral presentation, AWWA Annual Conference, Dallas, Texas, June, 2012.
100. Tobiason, Chihoski, J. and Volpe, D. "Manganese Control in Drinking Water Treatment: Preventing, Creating or Maintaining MnO<sub>x</sub>(s) Surfaces", poster presentation, International Water Association Particle Separation Conference, Berlin, Germany, June 2012.
101. Reckhow, D.A., Tobiason, J.E., Goodwill, J. and Jiang, Y., "Use of Ferrate in Small Drinking Water Systems", oral presentation, International Water Association Leading Edge Technology Conference, Bordeaux, France, June 2013.
102. Clark, L. and Tobiason, J.E., "Impacts of a Thermally Stratified Reservoir on Contaminant Spill Behavior at a Drinking Water Intake", oral presentation, AWWA Annual Conference, Denver, CO, June 2013.
103. Tobiason, J.E., Kaminski, G., Hiltz, M., Connors, D. and McClellan, J., "Second Stage Contactor for Sorption and Catalytic Oxidation of Manganese: From Lab to Full-Scale Start-Up", oral presentation, AWWA Annual Conference, Denver, CO, June 2013.
104. Goodwill, J., Reckhow, D.A., Tobiason, J.E., and Jiang, Y., "Bench-scale Assessment of Ferrate Pre-oxidation", oral presentation, AWWA Annual Conference, Denver, CO, June 2013.
105. Goodwill, J., Reckhow, D.A., Tobiason, J.E., and Jiang, Y., "Bench-scale Assessment of Metals Oxidation with Ferrate", oral presentation, AWWA Water Quality Technology Conference, Long Beach, CA, November 2013.
106. Goodwill, J., Jiang, Y., Tobiason, J.E., and Reckhow, D.A., "Pilot-scale Assessment of Ferrate Pre-Oxidation", oral presentation, AWWA Annual Conference, Boston, MA, June 2014.

107. Tobiason, J.E., Kamniski, G., Bazilio, A. and Goodwill, J., "Evaluation of First-Year Performance of Full-Scale Second-Stage Contactors for Manganese Removal from Groundwater", oral presentation, AWWA Annual Conference, Boston, MA, June 2014.
108. Jiang, Y., Goodwill, J., Reckhow, D.A., and Tobiason, J.E., "Ferrate Decomposition in Natural Waters and Impacts on Natural Organic Matter and Disinfection By-Product Precursors", oral presentation, AWWA Annual Conference, Boston, MA, June 2014.
109. Jeznach, L.C. and Tobiason, J.E., "Climate Change Impacts on the Thermal Stratification of the Wachusett Reservoir", oral presentation, AWWA Annual Conference, Boston, MA, June 2014.
110. Tobiason, J.E., Goodwill, J., Jiang, Y., Reckhow, D.A. and Gikonyo, J., "Impacts and Nature of Ferrate Induced Particle Formation in Drinking Water Treatment", oral and poster presentation, IWA Particle Separation Conference, Sapporo, Japan, June 15-18, 2014.
111. Tobiason, J.E., Kaminski, G., Bazilio, A. and Goodwill, J., "High-Rate Post Filter Contactors for Mn Removal: From Research to Full-Scale", oral presentation, New England Water Works Association 133<sup>rd</sup> Annual Conference, Rockport, Maine, September 21-24, 2014.
112. Jeznach L.C., Tobiason, J.E., Hagemann, M., Park, M.H. "Extreme event impacts on source water quality", poster presentation, World Environmental and Water Resources Congress (ASCE EWRI), Austin, Texas, May 2015.
113. Jiang, Y., Goodwill, J., Reckhow, D.A., and Tobiason, J.E., "Impacts of ferrate oxidation on natural organic matter and disinfection byproduct precursors", oral presentation, AWWA Annual Conference, Anaheim, CA, June 2015.
114. Goodwill, J., Jiang, Y., Gikonyo, J., Tobiason, J.E., and Reckhow, D.A., "Characterization of Iron Particles Resulting from Ferrate Pre-oxidation", poster presentation, AWWA Annual Conference, Anaheim, CA, June 2015.
115. Jeznach, L.C., Tobiason, J.E. Ahlfeld, D.P. "Understanding reservoir contaminant impacts through proactive modeling efforts", Oral Presentation, International Water Association (IWA) Symposium on Lake and Reservoir Management, Pembroke, Virginia, August 2015.
116. Bazilio, A. and Tobiason, J.E., "Manganese Removal and Disinfection Byproduct Formation", oral presentation, American Chemical Society 250<sup>th</sup> National Meeting, Boston, MA, August 2015.
117. Jiang, Y., Goodwill, J., Reckhow, D.A., and Tobiason, J.E., "Comparison of the effect of ferrate and ozone pre-oxidation on disinfection byproduct formation", oral presentation, Pacificchem 2015, Honolulu, Hawaii, December 2015
118. Bazilio, A., Mai, X., and Tobiason, J.E., "Disinfection Byproduct Formation During Manganese Removal", oral presentation, AWWA Annual Conference, Chicago, IL, June 2016.
119. Goodwill, J., Jiang, Y., Mai, X., Reckhow, D.A., and Tobiason, J.E., "Evaluation of Ferrate for Drinking Water Treatment", oral presentation, AWWA Annual Conference, Chicago, IL, June 2016.
120. Jeznach, L.C., Hagemann, M., Park, MH, and Tobiason, J.E. , "Extreme Precipitation Events: Potential Impacts To Raw Surface Water Quality", oral presentation, AWWA Annual Conference, Chicago, IL, June 2016.

121. Tobiason, J.E., J. G. Goodwill, Y. Jiang, X. Mai, J. Cunningham, and D.A. Reckhow, "Ferrate Induced Particles in Drinking Water Treatment", IWA Particle Separation Conference, oral presentation & proceedings paper, Oslo, Norway, June 2016.
122. Tobiason, J.E., J. G. Goodwill, Y. Jiang, X. Mai, J. Cunningham, and D.A. Reckhow "Implementation of Ferrate for Drinking Water Treatment", oral presentation, American Chemical Society 253<sup>rd</sup> Annual Meeting, Division of Environmental Chemistry, Symposium in honor of Prof. Jun Ma, San Francisco CA, 2-6 April 2017.
123. Cunningham, J., X. Mai, J.G. Goodwill, D.A. Reckhow, and J.E. Tobiason, "A Pilot-Scale Assessment of Ferrate (Fe(VI)) as an Intermediate Oxidant in Drinking Water Treatment Systems", oral presentation, AWWA Annual Conference, Philadelphia, PA, June 2017.
124. Goodwill, J.G., Alkattan, M., Reckhow, D.A., Tobiason, J.E., and Ikuma, K., "Treatment of Iodinated X-Ray Contrast Media in Drinking Water Using Ferrate and Other Strong Oxidants", poster presentation, AWWA Annual Conference, Philadelphia, PA, June 2017.
125. Jeznach, L., Mohan, A., Tobiason, J.E. and Reckhow, D.A., "Modeling the impacts of hypothetical oil spills on freshwater drinking sources", poster presentation, AWWA Annual Conference, Philadelphia, PA, June 2017.
126. Tobiason, J.E., Reckhow, D.A., Ram, K.R. and Stevens, D., "Assessment of Lead and Copper in Massachusetts Public School Drinking Water", poster presentation, AEESP Research and Education Conference, Ann Arbor, Michigan, USA 20-22 June 2017.
127. Tobiason, J.E., Reckhow, D.A. and Ram, K.R. "Assessment of Lead and Copper in School Drinking Water", poster presentation, AWWA Water Quality & Technology Conference, Portland, OR, November 2017.
128. Tobiason, J.E., Cunningham, J., and Reckhow, D.A. "Comparison of Pre and Intermediate Ferrate Treatment", oral presentation, AWWA Water Quality & Technology Conference, Portland, OR, November 2017.
129. Mohan, A., Jeznach, L., Reckhow, D.A., and Tobiason, J.E. "A Solid Phase Micro-Extraction Technique to Quantify Contaminant Inputs for Modelling Crude Oil Spill Impacts to Fresh Water", AWWA Annual Conference, Las Vegas, NV, June 2018.
130. Tobiason, J.E., Ram, K.R., Hatte, M-F., and Reckhow, D.A. "Comprehensive Assessment of Lead and Copper in School Drinking Water in Massachusetts", AWWA Water Quality & Technology Conference, Toronto, Ontario, Canada, November 2018.
131. Tobiason, J.E., Nguyen, C., Mai, X., Yan, W. and Larsen, Y. "Innovative bench-scale assessment of PAC for MIB and Geosmin Removal at DAF plants", AWWA Water Quality & Technology Conference, Toronto, Ontario, Canada, November 2018.
132. Mohan, A., Tobiason, J.E. and Reckhow, D.A., "Comparison of ozonation and ozonation AOPs for drinking water treatment during a fresh water oil spill", AWWA Water Quality & Technology Conference, Toronto, Ontario, Canada, November 2018.

## **SHORT COURSES**

- “Institute in Water Chemistry and Drinking Water Treatment”, University of Massachusetts at Amherst, 1988 and 1989.
- “Institute in Drinking Water Treatment”, Hotel Northampton, Northampton, MA, 1993-2018.
- “Water Treatment Workshop”, Massachusetts Water Resources Authority, 1997
- “Particles in Drinking Water Treatment”, Capetown, Durban, and Johannesburg, Republic of South Africa, 30 Oct – 1 Nov 2000.
- “Drinking Water Treatment Fundamentals”, Aquarion Water Company, Bridgeport, CT, 08 January 2003.

## **RESEARCH SUPPORT**

### LEAD PRINCIPAL INVESTIGATOR

- Tobiason, J. E., P.I., “Effect of Particle Size on the Performance of Deep-Bed Filters”, Graduate Research Council University of Massachusetts, 2/1/88 - 1/31/89, \$5,000.
- Tobiason, J. E., P.I., “Fundamental Aspects of Particle Deposition in Porous Media: Effect of Particle Size Distribution”, Engineering Foundation Research Initiation Grant, 9/1/88 - 8/31/89, \$20,000.
- Tobiason, J. E. & Edzwald, J. K., “An Investigation of Advanced Oxidation Processes”, South Central Connecticut Regional Water Authority, 1/1/89-12/31/89, \$55,000.
- Tobiason, J. E., P.I., “Effects of Flocculation on Direct Filtration”, National Science Foundation, 9/1/89-2/29/92, \$60,000.
- Tobiason, J. E., Edzwald, J.K. & Reckhow, D.A., “Effects of Oxidation on Organic Carbon and Disinfection By-Products”, South Central Connecticut Regional Water Authority, 1/1/90-12/31/90, \$78,500.
- Tobiason, J.E., Switzenbaum, M.S. & Reckhow, D.A., “Investigation of Pre-Ozonation and Biologically Active Filtration”, South Central Connecticut Regional Water Authority, 1/1/91-12/31/91, \$98,172.
- Tobiason, J.E., “AquaFuture Process Water Treatment Evaluation”, AquaFuture, Inc., 11/91 - 11/92, \$21,500.
- Tobiason, J.E., and Reckhow, D.A., “Evaluation of Alternative Oxidation Processes at the Passaic Valley Water Commission Pilot Treatment Facility”, Passaic Valley Water Commission, 1/92 - 12/93, \$181,380.
- Tobiason, J.E., Edzwald, J.K., Switzenbaum, M.S. and Reckhow, D.A., “Investigation of Ozonation, Dissolved Air Flotation and Biologically Active Filtration”, South Central Connecticut Regional Water Authority, 1/92-12/92, \$129,300.
- Tobiason, J.E., “Physical and Chemical Factors Affecting Colloid Transport in Groundwater”, Healey Endowment Grant, Graduate Research Council, University of Massachusetts, 9/92-8/93, \$5,000.

- Tobiason, J.E., Switzenbaum, M.S. and Reckhow, D.A., “Placement of Ozonation and Granular Activated Carbon for Improved Water Treatment”, SCCRWA, 1/93-12/93, \$105,000.
- Tobiason, J.E., “Hydraulic Modelling of Tidal Estuary Bridge Crossings”, Massachusetts Highway Department Research Project, 3/93-6/94, \$35,350.
- Tobiason, J.E., Reckhow, D.A. and Edzwald, J.K., “Assessment of Filtration Performance, Ozonation and Post-Filtration GAC”, South Central Connecticut Regional Water Authority, 1/95-12/95, \$115,000.
- Tobiason, J.E., Reckhow, D.A. and Edzwald, J.K., “Investigation of Treatment Performance: Particle Removal and D/DBP Kinetics”, South Central Connecticut Regional Water Authority, 1/96-12/96, \$116,600.
- Tobiason, J.E., Male, J.W., Reckhow, D.A. and Long, S.C., “Contaminant Transport Modeling and the Impact of Watershed Management Activities on Water Quality in Quabbin Reservoir, Metropolitan District Commission, 3/1/96 – 1/31/98, \$187,436.
- Tobiason, J.E., Reckhow, D.A. and Edzwald, J.K., “Research for Drinking Water Treatment Optimization”, South Central Connecticut Regional Water Authority, 1/97-12/97, \$121,000.
- Tobiason, J.E., Reckhow, D.A. and Edzwald, J.K., “Lake Gaillard Treatment Improvements and Distribution System Water Quality”, South Central Connecticut Regional Water Authority, 1/98-03/99, \$74,447.
- Tobiason, J.E., Reckhow, D.A., Edzwald, J.K. and Long, S.C., “Water Quality in MDC Reservoirs: Organic Matter, Algae and Modeling”, Metropolitan District Commission, 2/98-6/99, \$139,198.
- Tobiason, J.E., Edzwald, J.K. and Reckhow, D.A., “Upgrading Direct Filtration Using Dissolved Air Flotation and Ozonation”, South Central Connecticut Regional Water Authority, 1/99-03/00, \$128,159.
- Tobiason, J.E., Ahlfeld, D.P., “Water Quality in MDC Reservoirs: Project 1 Reservoir Water Quality Modeling”, Metropolitan District Commission, 7/99-6/01, \$169,214.
- Tobiason, J.E., Edzwald, J.K. and Reckhow, D.A., “RWA Treatment Improvements: Lake Gaillard DAF and Lake Saltonstall Coagulation Optimization”, South Central Connecticut Regional Water Authority, 1/00-03/01, \$99,994.
- Tobiason, J.E., Edzwald, J.K. and Reckhow, D.A., “Distribution System Water Quality Modeling and Strategies for Control of Natural Organic Matter and Disinfection By-Products”, BHC Company, 4/02-3/03, \$259,000.
- Tobiason, J.E. and Reckhow, D.A., “Distribution System Water Quality Modeling and Strategies for Control of Natural Organic Matter and Disinfection By-Products”, Aquarion Water Company, 4/03-3/06, \$755,100.
- Tobiason, J.E., “Chalmers Drinking Water Research Program”, Chalmers University, Göteborg, Sweden, 12/17/03 – indefinite, \$29,975.
- Tobiason, J.E. and Knocke, W.R., “Optimizing the Generation and Capacity of Adsorptive Sites on Oxide Surfaces for Manganese Control”, American Water Works Association Research Foundation, , 01/04 – 01/08. \$298,660

- Tobiason, J.E and Ahlfeld, D.P. “Water Quality in MDC Reservoirs: Project 1, Reservoir Modeling”, MA Department of Conservation and Recreation, Division of Water Supply Protection , 09/04-06/05, \$73,193; 10/06-06/08, \$173,847
- Tobiason, J.E. and Reckhow, D.A., “Control of Manganese, Natural Organic Matter and Disinfection By-Products for Mystic, CT”, Aquarion Water Company, 4/06-09/10, \$465,000.
- Tobiason, J.E. and Reckhow, D.A., “Coagulation Optimization for the SWSC West Parish Filtration Plant”, 09/07-01/09, Springfield Water and Sewer Commission, \$49,911.
- Tobiason, J.E., “The Role of DON in Fouling of Low-Pressure Membranes ”, American Water Works Association Research Foundation, 10/07-09/10, \$149,857.
- Tobiason, J.E., Ahlfeld, D.P. and Reckhow, D.A. “Water Quality in DCR Reservoirs 2008-2010”, MA Department of Conservation and Recreation, Division of Water Supply Protection , 07/08-06/10, \$249,560.
- Tobiason, J.E. and Rosenfeldt, E.J. “Chemical Treatment of Ion Exchange Regenerant”, MWH Americas, Inc, 06/09 – 07/11, \$120,000.
- Tobiason, J.E., “Impact of Coagulant Change on Performance of the SWSC West Parish Filtration Plant”, 10/09-01/11, Springfield Water and Sewer Commission, \$28,415.
- Tobiason, J.E., Ahlfeld, D.P., Park, MH and Reckhow, D.A. “Water Quality in DCR Reservoirs 2011-2012”, MA Department of Conservation and Recreation, Division of Water Supply Protection , 07/10-06/12, \$249,897.
- Tobiason, J.E. and Reckhow, D.A., “Manganese and DBP Control for AWC Mystic System and Mn Sequestration”, Aquarion Water Company, 09/10-08/11, \$93,998; 09/11-08/12, \$128,028; 09/12-08/13, \$133,226.
- Tobiason, J.E. and Park, C., “Investigation of Advanced Adsorbent for Arsenic and Phosphorous Removal”, Dankook University, Korea, 08/10-05/12, \$94,054.
- Tobiason, J.E., “Impact of Coagulant Change on Performance of the SWSC West Parish Filtration Plant”, 01/11-08/12, Springfield Water and Sewer Commission, \$37,591
- Tobiason, J.E., Ahlfeld, D.P., and Park, MH “Water Quality in DCR Reservoirs 2012-2014”, MA Department of Conservation and Recreation, Division of Water Supply Protection , 07/12-06/14, \$239,641.
- Tobiason, J.E. and Reckhow, D.A., “Algae, Manganese and DBP Control: AWC Putnam and Mystic WTPs”, Aquarion Water Company, 09/13-08/14, \$130,391; 09/14-08/15, \$129,255.
- Tobiason, J.E. and Park, MH “Water Quality in DCR Reservoirs 2014-2016”, MA Department of Conservation and Recreation, Division of Water Supply Protection , 07/14-06/16, \$239,897.
- Tobiason, J.E. and Reckhow, D.A., “Assistance to Small Water Systems in Massachusetts”, MA Department of Environmental Protection, 07/15-06/18, \$393,326.

- Tobiason, J.E. and Reckhow, D.A., “Algae, Manganese and DBP Control at Aquarion WTPs”, Aquarion Water Company, 09/15-08/16, \$133,256; 09/16-08/17, \$133,578; 09/17-08/18, \$138,927; 09/18-08/19, \$181,131.
- Tobiason, J.E. and Reckhow, D.A., “Assistance Program for Lead in School Drinking Water”, MA Department of Environmental Protection, 05/16-03/17, \$2,000,000.
- Tobiason, J.E. and Gleason, C. “Water Quality in DCR Reservoirs 2016-2018”, MA Department of Conservation and Recreation, Division of Water Supply Protection , 07/16-06/18, \$254,565.
- Tobiason, J.E. and Reckhow, D.A., “Assistance Program for Lead in School Drinking Water Phase 2”, MA Department of Environmental Protection, 08/17-06/19, \$599,220.
- Tobiason, J.E., Kumpel, E. and Gleason, C. “Water Quality in DCR Reservoirs 2018-2020”, MA Department of Conservation and Recreation, Division of Water Supply Protection , 07/18-06/20, \$269,374.

#### CO-PRINCIPAL INVESTIGATOR

- Reckhow, D. A., Edzwald, J. K., Tobiason, J. E., “Use of Ozone as an Aid to Coagulation/Filtration”, American Water Works Association Research Foundation, 9/1/88 - 6/30/91, \$150,000.
- Edzwald, J.K., Tobiason, J.E., Reckhow, D.A. and Switzenbaum, M.S., “Investigation of Enhanced Coagulation, Ozonation and Biologically Active GAC”, South Central Connecticut Regional Water Authority, 1/94-12/94, \$160,000.
- Edzwald, J.K., Tobiason, J.E. and Hedberg, T., “Dissolved Air Flotation: Research on Flocculation and Filtration”, Purac Rosewater Ltd. (UK) and NUTEK (Sweden), 6/94-8/95, \$120,000.
- Male, J.W., Edzwald, J.K., Reckhow, D.A. and Tobiason, J.E., “Contaminant Transport Modeling and the Impact of Watershed Management Activities on Water Quality in Quabbin Reservoir”, Metropolitan District Commission, 9/1/94 - 2/28/96, \$96,880.
- Edzwald, J.K. and Tobiason, J.E., “Investigations of Optimum Treatment Conditions for Dissolved Air Flotation and Sedimentation Plants”, Bridgeport Hydraulic Company, 1/96-12/96, \$110,648.
- Edzwald, J.K. and Tobiason, J.E., “Dissolved Air Flotation: Research on Flocculation and Filtration. High Rate DAF Treatment Technology”, Purac Ltd. (UK), 4/96-1/99, \$290,000.
- Reckhow, D.A., Edzwald, J.K., Ergas, S.J., Long, S.C., Ostendorf, D.W., Switzenbaum, M.S. and Tobiason, J.E., “An Environmental Engineering Facility for Research on Chemically-Enhanced Biodegradation: A Project Involving Both Equipment Acquisition and Development”, National Science Foundation, 9/96-6/98, \$157,445.
- Edzwald, J.K. and Tobiason, J.E., “Investigations of Enhanced Coagulation for Several Treatment Plants and Optimum Treatment Conditions for the Hemlocks DAF Plant”, Bridgeport Hydraulic Company, 1/97-12/97, \$135,000.
- Reckhow, D.A., Tobiason, J.E. and Edzwald, J.K., “Evaluation of Organic Matter in the MWRA Drinking Water Distribution System”, Camp Dresser & McKee Inc., 2/97-10/98, \$312,005.



- Edzwald, J.K. and Tobiason, J.E., “Impact of Recycle of Filter Backwash Water on Treatment Plant Performance”, BHC Company, 1/98-05/99, \$222,025.
- Edzwald, J.K. and Tobiason, J.E., “Impact of Filter Backwash Recycle on Clarification and Filtration”, American Water Works Research Foundation, 6/99-10/01, \$400,000.
- Reckhow, D.A., Edzwald, J.K., and Tobiason, J.E., “Water Quality in MDC Reservoirs: Project 2 NOM Characterization & Treatment Issues”, 7/99-6/01, \$146,347.
- Edzwald, J.K., Tobiason, J.E., and Reckhow, D.A., “Distribution System Water Quality Modeling and Strategies for Control of Natural Organic Matter and Disinfection By-Products”, BHC Company, 4/01-3/02, \$233,774.
- Ahlfeld, D.P. and Tobiason, J.E., “Water Quality in MDC Reservoirs: 2001-2003, Project 1, Reservoir Modeling”, Metropolitan District Commission , 07/01-06/03, \$180,045.
- Rees, P., Reckhow, D.A. and Tobiason, J.E., ““Water Quality in MDC Reservoirs: 2001-2003, Project 2, Watershed Data Collection and Modeling”, Metropolitan District Commission, 07/01-06/03, \$145,449.
- Edzwald, J.K. and Tobiason, J.E., “Coagulation Optimization of Drinking Water Supplies”, Aquarion Water Company, 07/03-09/04, \$90,000
- Ahlfeld, D.P. and Tobiason, J.E., “Water Quality in MDC Reservoirs: 2004, Project 1, Reservoir Modeling”, MA Department of Conservation and Recreation, Division of Water Supply Protection , 09/03-06/04, \$43,329.
- Long, S.C., Reckhow, D.A., Ahlfeld, D.P., Tobiason, J.E. and Rees, P.S., "MRI: Watershed Management and Drinking Water Supply Research Instrumentation", National Science Foundation Award BES-0320941, 1/04 – 12/06, \$450,049.
- Pettersson, T., Rosen, L., Hedberg, T., Svensson, G. and Tobiason, J.E., “Framework Program for Research and Development in Drinking Water: From Raw Water to Tap”, Swedish Water (VA-Forsk), 10/03 – 12/06, \$590,000 (SEK 4,400,000), in Sweden at Chalmers University of Technology.
- Cornwell, D.A, MacPhee, M. and Tobiason, J.E., “Innovative Applications of Treatment Processes for Spent Filter Backwash”, American Water Works Association Research Foundation, UMass subcontract to EET, Inc, 10/05-3/08, \$79,532 (of \$400,000 total project funding).
- Reckhow, D.A. and Tobiason, J.E., “Chloramination Feasibility Planning Study”, subcontract to CDM/Hazen and Sawyer, P.C., a Joint Venture, New York City Dept. of Environmental Protection, 8/06-02/11, \$210,000.
- Watkins, J., Vachet, R.W., Rotello, V., Arcaro, K., Xing, B. And Tobiason, J.E. “NSEC: Center for Hierarchical Manufacturing Supplement – Methods for Studying the Effect of Surface Chemistry on Nanoparticle Bioavailability”, National Science Foundation, 08/09 – 03/11, \$29,814 (of \$350,000 total grant).
- Reckhow, D.A., Tobiason, J.E., and Rees, P., “Use of Ferrate in Small Drinking Water Systems”, US Environmental Protection Agency, 11/11 – 12/16, \$497,078.
- Reckhow, D.A., Tobiason, J.E., et al., “Water Innovation Network for Sustainable Small Systems”, US Environmental Protection Agency, 07/14-07/19, \$4,100,000.

- Reckhow, D.A., Park, C., Tobiason, J.E., and Butler, C.S., "MRI: Acquisition of a Xevo G2-S QToF System" National Science Foundation, 09/14-08/16, \$535,412.
- Reckhow, D.A. and Tobiason, J.E., "Strategies for Minimizing the Adverse Impacts of an Oil Spill in Wachusett Reservoir on MWRA's Finished Water:", 07/15-06/16, \$97,568; 08/16-06/17, \$93,907; 07/17-06/20, \$296,642
- Reckhow, D.A. and Tobiason, J.E., "Impact of Pre-Oxidation on DBP Formation", Springfield Water and Sewer Commission, 12/20/2017-8/31/2018, \$75,226.

### **CONSULTING**

American Water Works Service Company  
AquaFuture, Inc.  
Audobon Society of Rhode Island  
Brunswick Topsham Water District  
CH2M Hill, Inc.  
Clean Filtration Technologies, LLC  
DHI  
Environmental Engineering & Technology, Inc.  
Environmental Partners Group, Inc.  
GHD  
Havens & Emerson, Inc.  
Hazen and Sawyer, Inc.  
HDR, Inc.  
Malcolm Pirnie, Inc., Engineers & Scientists  
Maguire Group  
Metcalf & Eddy, Inc.  
Morrison, Mahoney, & Miller, Attorneys at Law  
Olver, Inc.  
Springfield Water and Sewer Commission  
Sverdrup Civil, Inc.  
Town of Lee, Massachusetts  
United Water  
Wareham Fire District  
Weston & Sampson, Inc.  
Woodard and Curran, Inc.

### **PERSONAL**

Born 24 September 1955, Boston, Massachusetts.  
Married, two children.