

THE UNIVERSITY OF BRITISH COLUMBIA

PUBLICATIONS RECORD

NAME IN FULL: (surname first) **MAVINIC, Donald S.** Date of most recent revisions (please initial):
DEPARTMENT OR SCHOOL: Civil Engineering April 2011
FACULTY: Applied Science _____

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- a) **Publications or original works (including books, performances, films, exhibitions, etc.). List proper bibliographical form according to the discipline including title and pagination, and indicate with an asterisk those you consider of primary importance. Include only those published or in press. Work appearing in refereed publications should either be identified by an ^R in the left hand margin beside the bibliographical entry or by separate listing under the heading: Refereed Publications.**

Example 1:

^RFaiman, M.D., Nolan, R.J. "Effect of High Oxygen Pressure on Brain ATP," *Biochem. Pharmacol.* 22:2171-2181 (1973)

Example 2:

*Dubois, Rene, "Man Adapting," *Yale University Press, New Haven, Connecticut, 1965, 300 pages.*

- b) **Completed and unpublished material including Commission Reports, Discussion Papers or similar materials (include only those of significance; if paper read at a conference, indicate date and nature of conference as well as status of other material).**
- c) **Work in progress (indicate degree of completion at the time of last updating of curriculum vitae).**

(a) PUBLICATIONS OR ORIGINAL WORKS

i) Full Refereed Journals

1. Mavinic, D.S. and Bewtra, J.K., "Bubble Size and Contact Time in Diffused Aeration Systems", *J. Water Pollution Control Federation*, Washington, DC, September 1974, pp. 2129-2137.
2. Mavinic, D.S. and Bewtra, J.K., "Mass Transfer of Oxygen in Diffused Aeration Systems", *Canadian Journal Civil Engineering*, Sept. 1974, pp. 71-84.
3. Koers, D.A. and Mavinic, D.S., "Aerobic Digestion of Waste-Activated Sludge at Low Temperatures - Operation and Control", paper presented at the 48th Annual Conf., *Water Pollution Control Federation*, Miami Beach, Florida, October 5-10, 1975. Also published in *J. Water Pollution Control Federation*, Washington, DC, March 1977, pp. 460-468.
4. Mavinic, D.S. and Bewtra, J.K., "Efficiency of Diffused Aeration Systems in Wastewater Treatment", *J. Water Pollution Control Federation*, Washington, DC, October 1976, pp. 2273-2283.
5. Uloth, V.C. and Mavinic, D.S., "Aerobic Bio-Treatment of a High-Strength, Sanitary Landfill Leachate", paper presented at the *ASCE National Conf. on Environmental Engineering, Research, Development and Design*, Seattle, WA, July 12-14, 1976. Also, *Journal of the ASCE Envir. Eng. Div.*, Vol. 103, No. 4, August 1977, pp. 647-661.

6. Mavinic, D.S. and Koers, D.A., "Aerobic Sludge Digestion at Cold Temperatures", paper presented at, and published in, the Proceedings of the 3rd Canadian Hydrotechnical Conf., CSCE, Quebec City, May 29-31, 1977, pp. 501-522. Also, Canadian Jour. Civ. Eng., Vol. 4, No. 4, Dec. 1977, pp. 445-454.
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13. Zapf-Gilje, R. and Mavinic, D.S., "Characteristics of the Fill-and-Draw Reactor", (Tech. Note) Jour. Envir. Eng. Div., ASCE, Vol. 108, No. EE4, August 1982, pp. 808-812.
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 27. Anderson, B.C. and Mavinic, D.S., "Enhanced Aerobic Digestion of Waste Activated Sludges: Behaviour of Nitrogen and Phosphorus", Proc. 1992 CSCE-EED Specialty Conf., Quebec City, Vol. 2, pp. 145-154.

28. Boulanger, M., Mavinic, D.S. and Nemeth, L., "The Effect of Air ... Aerobic Digesters", Proc., Env. Engrg. Specialty Conf., CSCE, Winnipeg, June 1-4, 1994, pp. 67-76.
29. Boulanger, M.L, Fries, M.K., and Mavinic, D.S. "The Effect of Air Supply on Quality of Return Flows From ATAD Sludge Stabilization", Proc. 68th Conf., Water Env. Fed., Miami Beach, Oct. 21-25, 1995, pp. 303-311.
30. Shiskowski, D.M. and Mavinic, D.S. "Biological Treatment... Pre/Post Denitrification Processes", Proc. Env. Eng. Specialty Conf., CSCE, Edmonton, May 29-June 1, 1996, pp. 321-332.
31. Chu, A. and Mavinic, D.S. "A Novel Aeration.... Treatment Processes", Proc. Env. Eng. Specialty Conf., CSCE, Edmonton, May 29-June 1, 1996, pp. 515-526
32. Mavinic, D.S., Hall, E., Niedbala, D., Koch, F. and Abraham, K. "Pilot-Scale Studies of the Anaerobic Digestion of Combined Sludges from a Full-Scale NBR Wastewater Treatment Plant", Proc. 69th Conf., Wastewater Treatment Research, Vol. 1, Water Env. Fed., Dallas, TX, Oct. 5-9, 1996, pp. 151-160.
33. Brereton, J.A. and Mavinic, D.S. (1997). "The Material Specific Simulated Distribution System Test for Disinfection By-Product Formation Potential". Presentation at 1997 AWWA Conference, Atlanta, G.A., June 15-19, 1997.
34. Zhao, H.W., Mavinic, D.S., Oldham, W.K. and Koch, F.A. "Pre-Denitrification with Methanol in Single-Sludge BNR Processes Treating Domestic Sewage", Proc., 71st Conf., Wastewater Treatment Research, Water Envir. Fed., Orlando, FL, Oct. 3-7, 1998.
35. Brereton, J. and Mavinic, D.S. "Effect of Distribution System Residence Time on Chloroform Production", poster session paper, 19th IAWQ Biennial Conference, Vancouver, B.C., June 21-26, 1998. (Proceedings).
36. Koh, J., Mavinic, D.S., Oldham, W.K., Meisen, A, and Nuttall, J.J. "Changes in Aerobic Digester Performance –SBR", Proc. 2000 CSCE-EED. Specialty Conf., June 7-10, 2000, London, Ont. pp. 233-248.
37. Brereton, J., Mavinic, D.S. and Smith, D.W. "A Comprehensive Study of THM Formation in Cast-Iron Pipes." 2000 CSEC-EED. Specialty Conf., London, Ont., June 7-10, 2000, pp. 336-342.
38. Brereton, J., Mavinic, D.S. and Ferguson, A.M.D. "Monitoring THM Yield in Water Distribution Systems", Proc. 2000 CSCE-EED Specialty Conf., June 7-10, 2000, London, Ont. pp. 343-350.
39. Li, J.Z., Mavinic, D.S. and Kelly, H. G. "Recovering Carbon Sources from Thermophilic Aerobically Digested Sludge for BNR" Proc. R'2000, 5th World Congress and Trade Show-Recovery, Recycling and Reintegration, Toronto, June 5-9, 2000, pp. 138-143.
40. Zhou, J., Mavinic, D.S. and Kelly, H. G. "Floc Size Profiling to Characterize Dewatering Properties of Thermophilic and Mesophilic Aerobically Digested Biosolids, Proc. 2001 CSCE 7th – EED Specialty Conf., May 30 – June 3, 2001, Victoria, B.C., pp. 121-128.

41. Zhou, J., Kelly, H.G., Mavinic, D.S. and Ramey, W.D. "Digestion Effects on Dewaterability of Thermophilic and Mesophilic Aerobically Digested Biosolids", Proc. 74th Conf., Wastewater Treatment Research, Water Env. Fed'n., Atlanta, GA, October 13-17, 2002. On CD-ROM.
42. Zhou, J., Mavinic, D.S. and Kelly, H.G. "Dewaterability of Thermophilically and Mesophilically Digested Biosolids", Proc. 2nd Canadian Biosolids Conf., Penticton, B.C., April 23-26, 2003.
43. Berube, P.R., Chin, A., et al. "Removal of DBP Precursors Using...Advanced Oxidation", AWWA Water Quality Conference, San Antonio, TX, June 2004 (CD-ROM).
44. Mahendraker, V., Mavinic, D.S. and Rabinowitz, B. "A Comparative Evaluation of Oxygen...in Activated Sludge", CAWQ Eastern Region Conference, Ottawa, November 2004 (CD-ROM).
45. Bhuiyan, I., Mavinic, D.S. and Koch, F.A., "Phosphorus Recovery Through Struvite Crystallization and it's Impact on Biosolids", Proc. 21st Annual Pacific NW Solid Waste Symposium (SWANA), April 5-7, 2006, Richmond, B.C. (CD-ROM).
46. Simm, R.A., Mavinic, D.S. and Ramey, W. "Development of a Conceptual Model to Explain Apparent Free Ammonia Inhibition in Wastewater Systems", Proc. 79th Conf., Leading Edge Research, Water Env. Fed'n, Dallas, TX, Oct. 21-25, 2006 (CD-ROM).
47. Fattah, K.P., Sabrina, N., Britton, A., and Mavinic, D.S. "Phosphorus Recovery as a Struvite From Centrate: Carbon Dioxide Stripping in Reducing Costs in a Struvite Crystallizer", Proc. 81st Conf., Water Env. Fed'n, Chicago, Ill., Oct 20-25, 2008 (CD-ROM).

iv) **Accepted and Presented Invited Papers (Published Proceedings)**

1. Mavinic, D.S., "Selecting a Treatment System", paper presented at the Federal-Provincial Technology Transfer Seminar - "Considerations in the Design of Sewage Treatment Plants", Victoria, April 7, 1976.
2. Mavinic, D.S., "Leachate Treatment Schemes - Research Approach", paper presented at the EPA 5th Annual Gas & Leachate Symposium, Orlando, Florida, March 26-28, 1979.
3. Mavinic, D.S., "Nitrification Toxicity", paper presented the Specialty Conference on Nutrients, Charleston, SC, Nov. 11-12, 1987.
4. Mavinic, D.S., "Leachate Treatment and Disposal - Research and Development", presented at Leachate Treatment Symposium, Toronto, March 1991.
5. Mavinic, D.S. "Leachate Quality: Effects on Technology", presented at Int. Training Seminar on MSW Landfill Leachate, Venice, Italy, Dec. 2-4, 1998.
6. Mavinic, D.S. "Nitrification and Denitrification", presented at Int. Training Seminar on MSW Landfill Leachate, Venice, Italy, Dec. 2-4, 1998.
7. Mavinic, D.S. "Leachate Treatment Plants in Canada", presented at Int. Training Seminar on MSW Landfill Leachate, Venice, Italy, Dec. 2-4, 1998.

8. Mavinic, D.S. "Leachate Generation, Characterization and Effects on Treatability: R & D Experiences", presented at Int. Training Seminar on Landfill Emissions, Durban, S.A., Dec 6-8, 2000.
9. Mavinic, D.S. "Biological Leachate Treatment: Nitrification and Denitrification", presented at Int. Training Seminar on Landfill Emissions, Durban, S.A., Dec 6-8, 2000.
10. Mavinic, D.S. "Leachate Treatment Plants in North America and Abroad", presented at Int. Training Seminar on Landfill Emissions, Durban, S.A., Dec. 6-8, 2000.
11. Kelly, H.G. and Mavinic, D.S. "Autothermal Thermophilic Aerobic Digestion", 1 day workshop, WEFTEC 2003, Los Angeles, CA., October 11, 2003, Also, Vice-Chair of that Workshop.

v) **Conference Presentations**

1. Koers, D.A. and Mavinic, D.S., "Cold-Temperature, Aerobic Digestion of Waste Activated Sludge", paper presented at the 42nd Annual Conference, Pacific Northwest Pollution Control Association, Boise, Idaho, October 22-24, 1975.
2. Anderson, B. and Mavinic, D.S., "Aerobic Sludge Digestion with Lime Addition", paper presented at the joint BCWWA/PNPCA Conference, Nov. 3-5, 1982, Vancouver, B.C.
3. Anderson, B. and Mavinic, D.S., "Improvements in the Aerobic Digestion of Waste Activated Sludge Through Control of Mixed Liquor pH: Pilot Scale Studies", Paper presented at 61st WPCF Conf., Dallas, TX, October 1988.
4. Hyslop, W.F., Vassos, T.D., Rabinowitz, B. and Mavinic, D.S., "Development of Design Criteria for Effluent Disposal Using Snowmaking Equipment", Paper presented at 51st WPCF Conference, Dallas, TX, October 1988.
5. Knezevic, Z., Mavinic, D.S. and Anderson, B.C., "Enhanced Anaerobic Stabilization of Combined Wastewater Sludges Through Stabilization of Waste Activated Sludge", paper given at the 1992 BIOFOR-BIOQUAL Conference, June 9-11, 1992, Vancouver, B.C.
6. Azevedo, B. and Mavinic, D.S., "Effect of Ammonia Loading Rate, Solids Retention Time and Operating Temperature on Nitrification and Denitrification of Landfill Leachate", paper given at the 1992 BIOFOR-BIOQUAL Conference, June 9-11, 1992, Vancouver.
7. Knezevic, Z., Mavinic, D.S. and Anderson, B.C., "Pilot-Scale Evaluation of Anaerobic Co-Digestion of Primary and Pretreated Waste Activated Sludge", presented at BCWWA Annual Conf., May 8-10, 1994, Victoria, B.C.
8. Fothergill, S. and Mavinic, D.S. "The Effect of Primary and Secondary Sludge Mix Ratio on VFA Production in ATAD", paper resented at the CAWQ Western Regional Symposium, University of Alberta, Edmonton, May 29, 1996.

9. Brereton, J. and Mavinic, D.S. "Effects of Tuberculated Cast-Iron Water Mains on THM Occurrence", paper presented at the CAWQ Western Regional Symposium, University of Alberta, Edmonton, May 29, 1996.
10. Mahendraker, V. and Mavinic, D.S. "Impacts of Selectors in Activated Sludge Processes on Oxygen Transfer", 4th CAWQ Western Regional Symposium, UBC, Vancouver, May 8-9, 2000.
11. Koh, J.H., Mavinic D.S. et al. "Changes in Aerobic Digestion Performance with the Use of CH₃OH for BNR in a Full-Scale SBR", 4th CAWQ Western Regional Symposium, UBC, Vancouver, May 8-9, 2000.
12. Brereton, J.B. and Mavinic, D.S. "DPB Protocol for Water Distribution Systems" 4th CAWQ Western Regional Symposium, UBC, Vancouver, May 8-9, 2000.
13. Chan, K. and Mavinic, D.S. "Effect of Biofilm on DBP in a PVC Distribution System", 4th CAWQ Western Regional Symposium, UBC, Vancouver, May 8-9, 2000.
14. Zhou, J., Kelly, H. and Mavinic, D.S. "Dewatering Thermophilic Digested Biosolids – the Practice and Challenge", 4th CAWQ Western Regional Symposium, UBC, Vancouver, May 8-9, 2000.
15. Brereton, J.A., Mavinic, D.S., H. Lee, and Oldham, W.K. "Methanol-Induced Nutrient Removal at a Full-Scale SBR", 4th CAWQ Western Regional Symposium, UBC, Vancouver, May 8-9, 2000.
16. Brereton, J.A., Mavinic, D.S. et al. "Kent Wastewater Treatment Study, Phase 2-Status, Plans & Expectations", 28th Annual BCWWA Conference, Victoria, April 15-19, 2000.
17. Farahbaksh, K., Smith, D.W., Mavinic, D.S. et al. "Seymour Pilot Plant, Phase II Status-Investigation of Ultra Filtration ---Water Quality", 28th Annual BCWWA Conf., Victoria, April 15-19, 2000.
18. Bonneville, C., Brereton, J., Mavinic, D.S. et al "Seymour Pilot Plant, Phase I Results-Investigation of Water Treatment ---B.C.", 28th Annual BCWWA Conf., Victoria, April 15-19, 2000.
19. Mavinic, D.S. and Oldham, W.K. "Nutrient Removal in a Full-Scale SBR Plant – Agassiz, B.C." B.C. Hydro Seminar, May 10-11, 2001, Richmond, B.C. (2 papers given).
20. From 2001-2010, a total of 22 co-authored (with grad students) papers have been presented at either the Annual BCWWA Conference or the CAWQ Western Regional Conference, held in Whistler or Penticton, B.C. Students were the presenters.

(b) REPORTS (Research Funded Only)

1. Jackman, S., Koch, F. and Mavinic, D.S., "Desorption of Pollutants from Solid Waste/Septic Tank Pumping Lysimeters", Final Report Prepared for Fisheries and Environment Canada, EPS, Ottawa, October 1979, 230 pp.

2. Anderson, B.C. and Mavinic, D.S., "Aerobic Sludge Digestion with Lime Addition - Preliminary Investigation", Environmental Eng. Tech. Report prepared under contract funding to NSERC, Ottawa, October 1982, 141 pp.
3. Jasper, S., Atwater, J.W. et al., "Determination of Trace Organic Compounds in Canadian Coal Wastewaters", Report prepared for EPS, Coal Working Group, Ottawa, May 1983, 70 pp. (Atwater & Mavinic principal investigators).
4. Jasper, S., Atwater, J.W. et al., "Determination of Trace Organic Compounds in Canadian Coal Wastewaters and Wastewater Sludges", Report prepared for EPS, Coal Working Group, Ottawa, August 1985, 133 pp. (Atwater and Mavinic principal investigators).
5. Zapf-Gilje, R., Russell, S.O. and Mavinic, D.S., "Snowmaking - An Alternative for Sewage Effluent Disposal", Engineering Digest, Vol. 32, No. 4, April 1986, pp. 28-30.
6. Atwater, J.W. et al., "Characterization and Treatment of Leachate from a West Coast Landfill", Final report prepared for DSS and Environment Canada, Ottawa, April 1986, 300 pp. (Atwater and Mavinic principal investigators).
7. Anderson, B.C. and Mavinic, D.S., "Aerobic Sludge Digestion with pH Control - Pilot Scale Studies", Final Report to B.C. Science Council, Vancouver, October 1985, 40 pp. (Mavinic principal investigator).
8. Town, C.A. and Mavinic, D.S., "Instream Aeration of the Serpentine River", Final report to DSS and Fisheries/Oceans Canada, Vancouver, June 1986, 117 pp. (Mavinic principal investigator).
9. Manoharan, R., Liptak, S.C. et al., "Inhibition of Nitrification and Denitrification in Biotreatment of a High Ammonia, Municipal Leachate", Final report to DSS, Environment Canada and Virginia Environmental Endowment Fund, June 1990, 209 pp. (Mavinic and Randall principal investigators).
10. Mavinic, D.S. and Anderson, B.C., "Comparison of Aerobic and Anaerobic Processes in the Digestion of Mixed Sludges from Biological-P Removal Plants", Final report to NSERC, March 1991, 52 pp. (Strategic grant).
11. Knezevic, Z. and Mavinic, D.S., "Enhanced Anaerobic Digestion of Combined Wastewater Sludges Through Solubilization of Waste Activated Sludge", Final report to B.C. Science Council, Vancouver, March 1993, 59 pp (Mavinic principal investigator).
12. MacQuarrie, D. and Mavinic, D.S., "GVWD Corrosion Control Initiative: Phase II - Inhibitor Chemical Testing at Seymour Dam", Summary report to GVRD, March 1993, 200 pp, (GVWD Research Contract).
13. Niedbala, D., Mavinic, D.S. and Hall, E.R. "Pilot-scale Studies of the Anaerobic Digestion of Combined Wastewater Sludges and Mitigation of Phosphorus Release," Summary report to Stanley Associates Engineering, Ltd., April 1995, 154 pp. (B.C. Science Council/NSERC Research Contract).
14. Churchill, D.M. and Mavinic, D.S. "The Effect of Zinc Orthophosphate and pH/alkalinity Adjustment on Copper and Lead Levels in Drinking Water", Summary report to GVRD, May 1997, 215 pp. (GVWD Research Contract).

15. Dumitrescu, A., Mavinic, D.S. and Koch, F.A. “Design and Testing of a Short HRT Attached Growth Pre-Fermenter System: SCVFA Production by 2 Media and 2 Feed Sources”, Summary Report to Reid Crowther Ltd., April 1998, 133 pp. (BC Science Council/NSERC Research Contract).
16. Doucette, D.P., Mavinic, D.S. and Koch, F.A. “ Fixed Film Fermentation of Wastewater and it’s Effect on BNR Plant Performance”, Summary Report to Reid-Crowther Ltd., Sept. 1999, 167 pp. (B.C. Science Council/NSERC Research Contract)
17. Brereton, J.A., Chan, K. and Mavinic, D.S. “Effects of Biofilm on THM Formation in Chlorinated Drinking Water Distributed in PVC Pipe Systems”, Summary Report to B.C. Hydro Water and Wastewater Centre, September 2001, 13 pp. (B.C. Hydro Research Contract).
18. Kenway, S. Mavinic, D.S. and Hall, E.R. “The Efficiency of Membrane Filtration For Reducing the Disinfection By-Product Formation Potential”, Summary Report to B.C. Hydro Water and Wastewater Centre, August 2001, 14 pp. (B.C. Hydro and NRC Research Contract).
19. Brereton, J.A., and Mavinic, D.S. “Nutrient Removal at Full-Scale SBR Plant Using Methanol For Denitrification – Agassiz, B.C.” Summary Report to B.C. Hydro Water and Wastewater Centre, October 2001, 14 pp. (B.C. Hydro and Stantec Research Contract).
20. Kelly, H.G. and Mavinic, D.S. “Autothermal Thermophilic Aerobic Digestion – Research, Applications and Operational Experience”. Course notes, WEFTEC 2003 Workshop 104, October 11, 2003, Los Angeles, CA. 44 pages.