

Curriculum Vitae

(954) 923-7374 (O)

LARRY EDWARD FINK

(954) 226-9663(C)

Owner and Principal
Waterwise Consulting™, LLC
<http://www.waterwiseconsulting.com>
1601 S. Ocean Drive
Suite 406
Hollywood, FL 33019-2405
Toll Free: (877) 426-9493

SKILLS

- Mastery of environmental chemistry concepts, principles, practices, and applications
- Development, management, and supervision of environmental monitoring, research, modeling, assessment, and remediation programs, projects, and methods
- Single- and multi-media human and wildlife risk assessment and criteria derivation
- Modeling wastewater treatment, runoff, aquatic transport-fate and bioaccumulation
- Preparation and peer review of Environmental Assessments/Impact Statements
- Environmental permits, TMDLs, litigation support, and expert testimony
- Environmental education, communication, public relations, and meeting facilitation
- Florida-Qualified Stormwater Management Inspector

EMPLOYMENT

2007-	Owner and Principal, Waterwise Consulting™, LLC
2000-2011	Lead Environmental Scientist, SFWMD, W. Palm Beach, FL
1991-2000	Senior Supervising Environmental Scientist, SFWMD, W. Palm Beach, FL
1988-1991	Senior Environmental Scientist, SAIC, McLean, VA
1984-1987	Chemist, USEPA, Great Lakes National Program Office, Chicago, IL
1978-1984	Chemist, Michigan Department of Natural Resources, Lansing, MI

EDUCATION

1978	M.S. Environmental Health Sciences, University of Michigan-Ann Arbor
1973	B.S. Chemistry (Honors), University of Michigan-Ann Arbor

REFERENCES

Anders Andren, Director, Wisconsin Sea Grant Program, Madison, WI
Don Axelrad, FL DEP Mercury Coordinator
Theo Colborn, Author, Our Stolen Future, 1996
Thomas Fontaine III, Director, Western Ecology Division, Office of R&D, USEPA
Aaron Higer, USGS (retired)
Richard Uhler, Battelle, Inc.
Mark Van Putten, Director, Nat'l Wildlife Federation Great Lakes Nat. Resource Center (1982-96)

PROFESSIONAL HIGHLIGHTS

- Wrote/defended first proposed revisions to Rule 1057: Michigan Toxic Substances WQS
- Major contributor to critique of Dow Chemical Co.'s "Trace Chemistries of Fire" Report
- Provided technical support for BASF-Wyandotte litigation and process characterization
- Co-Authored Region 5 response to court TMDL ruling in Scott v. City of Hammond et al.
- **Awarded USEPA Region V Administrator's Bronze Medal** for co-authoring the *Lake Michigan Toxic Pollutant Control/Reduction Strategy* to implement court order
- Major contributor to Great Lakes section of **Water Quality Act Amendments of 1987** and Region V Administrator and Great Lakes Program Manager **Congressional testimony**
- Major impetus/contributor to design & implementation of **Green Bay Mass Balance Study**
- Co-Chair and Co-Author of "**Battle of the Great Lakes Models**" Workshop and Report
- First Author of *Technical & Management Options for Lakewide Management Planning*
- Co-Author of sediment criteria manual to guide remediation & source control applications
- Project Manager and First Author for *Modeling Toxic Substances Target Load Reductions in the Great Lakes: Part I - The Great Lakes Water Quality Model (Development) and Part II - Evaluation of Resource Management Issues and Options* for the Great Lakes Natural Resources Center, National Wildlife Federation, Ann Arbor, MI
- Foran, J. and Fink, L.E. **Regulating Toxic Substances in Surface Water**, Lewis, Boca Raton
- **Mercury Program Manager**, South Florida Water Management District
- **Interagency Coordinator, South Florida Mercury Science Program**
- Organizer and Co-Chair, 16-County Toxic Substances Round Table
- **Organizer and Chair, So. FL Hg Science Program Annual Workshop**, W. Palm Beach, FL
- **Co-organizer** and contributor, **Workshop on Effects Assessment for Mercury in Fish-eating Birds: Setting an Avian Wildlife Criterion**, River Ranch, FL.
- Co-chair of **ASR Regional Study PDT Water Quality Subcommittee** and **author of water quality-related responses** to National Academy of Sciences peer review comments deemed by the Chair of the Federal Task Force as **the standard for all CERP projects**
- Author of technical "white paper" supporting SFWMD petition to allow STA-2 Cell 1 operations in flow-through mode to expedite stabilization while minimizing wildlife risks
- Project Manager of coop. agreement to revise & apply Everglades Hg Cycling Model (II)
- Planned, managed, and first author of report on **STA-2 Mercury Special Studies Project**
- **Innovated high-volume ultra-trace Hg/MeHg pore water sampler**
- Co-author of **CERP Guidance Memorandum (CGM) 42** for project Hg/Toxics screening
- Developed and managed **Soil Hg Baseline Study** for proposed 50,000-acre footprint of planned **EAA Reservoir Project** subsequently **adopted as model design** in CGM 42
- Developed bioaccumulation model to evaluate static vs. dynamic ecotoxicological risks
- Co-developed and defended **adaptive sediment monitoring design** for L-19 dredging project adopted as **standard operating procedure** by SFWMD's Lands Division
- Endangered species & water quality compliance for **L. Trafford Phase III Dredging Project**
- Session Chair, "**Unifying Concepts in Environmental Restoration Planning**", GEER, 2010
- Provided guidance on review/comment strategies for Dow's Superfund sites clean-up plans
- Peer reviewed draft language for proposed endocrine disrupter protection act of 2011
<http://www.cnn.com/2011/HEALTH/07/08/chemical.bans/index.html>

AWARDS, HONORS, AND ELECTED AND APPOINTED POSITIONS

- Founder and President, The Foresight Society, Lansing, MI. 1982-84
- Member at Large, Board of Directors, Sierra Club Michigan Chapter. 1983-84
- Regional Administrator's Bronze Medal for Commendable Service, U.S. Environmental Protection Agency, Region V, Chicago, IL. January 1987
- USEPA Region V Cash Awards for Outstanding Performance in 1985 and 1986
- SFWMD Shared Timer Powers Cash Awards for Exemplary Performance for Inter-Agency Everglades Mercury Research Program Coordination and Support in 1995 and 1997
- Member, Task Force for Development of Freshwater Sediment Quality Criteria, Florida Department of Environmental Protection. 1999
- Executive Director's Award for Excellence for the preparation of Chapter 7: The Everglades Mercury Problem in the Everglades Consolidated Report (2000), South Florida Water Management District. 2000

OTHER EDUCATION, TRAINING AND CERTIFICATION

- Minor in Secondary Education, University of Michigan-Flint. 1976
- Teacher Certification, Secondary Education: Chemistry, Physics and Mathematics, State of Michigan. 1976
- Toxic Substances Water Quality Modeling. Manhattan College. NYC, NY. 1980
- Water Quality Standards and Modeling. USEPA. Chicago, IL. 1985 and 1986
- Risk Assessment Trainers Training. USEPA. Easton, MD. 1987
- The Use of MINTEQ in Ecological Risk Assessment. SETAC. Houston, TX. 1993
- Qualified Stormwater Management Inspector. Dept. of Environ. Protection. Jupiter, FL. 2008
- AQUATOX III. USEPA/SETAC. Tampa, FL. 2008
- Standard First Aid & Cardiopulmonary Resuscitation/Automated External Defibrillator - Adult. SFWMD. West Palm Beach, FL. 2009 and 2011.
- The Endangered Species Act of 1973. Section 7: Interagency Cooperation. U.S. Fish and Wildlife Service. West Palm Beach, FL. 2009

PROFESSIONAL AFFILIATIONS

- Society of Environmental Toxicology and Chemistry (1982-1993; 2008-present)
- American Chemical Society (1986 - present)
- American Association for the Advancement of Science (1984-1991)

PROFESSIONAL EXPERIENCE

July 2004 – July 2011: So. Fla. Water Management District, West Palm Beach, FL. Lead Environmental Scientist. Nimmy Jeyakumar, Ron Bearzotti, Georgia Vince, John Mitnik, John Morgan, and Tom Teets, Supervisors

Responsibilities

- Infrastructure construction, repair and dredging project permit application and post-issuance compliance tracking
- Centralized Monitoring and Tracking Database development and implementation
- Water quality consultations on sources, fate, effects, and modeling for Land Acquisition and the Comprehensive Everglades Restoration Plan projects

Major Accomplishments:

- CERP Project: North Palm Beach County Part 1
 - L-8 Reservoir Project: peer review of seepage study plan; calculation of time-to-recovery to chloride WQS under various operational scenarios; coordination and tracking of multi-departmental compliance with water quality monitoring requirements
 - G-161 Project: coordination and tracking of multi-departmental compliance with flow, stage, vegetation, wildlife, and water quality monitoring requirements
 - lead author of 5-Yr. Operations Monitoring Plan (Plan) & sole author of 1st Annual Report
 - co-author of revised G-161 three-party MOA for implementation of Plan
- C-4 Emergency Detention Basin
 - in consultation with District biologists, redesigned, then reduced wildlife monitoring program with approval of Environmental Monitoring Coordination Team
 - prepared W.O. SOWs for ecological monitoring, QA/QC, data management and reports
 - coordinated District and contractor staff preparation for biennial workshops and comprehensive reports and chaired workshop
- C-4 Canal/S-65B Dredging Project
 - water and sediment quality technical support, including proposal to combine future geotechnical and soil and sediment quality pre-application studies to cut project costs
 - water and sediment quality technical support for ERP application and RAIs responses
 - technical support for dewatering treatment system and discharge monitoring design
- Water Quality Consultations
 - peer review of soil/sediment physicochemical studies, bioassays, and exposure models used to evaluate ecotoxicological risks when land use changes from dry to wet
 - L-16 dredging project consultations led to adoption of adaptive, least-cost monitoring study design
 - EAA Reservoir Project consultations included spreadsheet models to simulate toxaphene bioaccumulation *in vitro* and *in situ* for various Woerner Turf exposure scenarios
 - Regional ASR Pilot Project consultations included peer review of draft bioassay, microcosm and mesocosm study designs; monitoring plans and reports; and ERA plans and reports
 - peer-reviewed draft Project-Specific Water Quality and Hydrologic Monitoring CGM

PROFESSIONAL EXPERIENCE

July 2000 – July 2004: South Fl. Water Management District, West Palm Beach, FL. Lead Environmental Scientist. Timothy Bechtel, Supervisor.

Regulatory and policy applications of environmental chemistry and toxicology to environmental remediation, restoration and protection.

Responsibilities

- Design, implementation, trouble-shooting, quality control, interpretation, and application of results of mercury transport, biogeochemistry, bioaccumulation, and effects special studies
- District's Mercury Studies Program Manager (July 2000 – January 2004)
- CWA and EFA Permit Compliance Support and Oversight for Hg mandates
- Water quality consultations on sources, fate, effects, and exposure modeling for Land Acquisition and the Comprehensive Everglades Restoration Plan (CERP) projects

Major Accomplishments

- CERP Guidance Memorandum (CGM) 42
 - initiated, co-developed, co-authored, applied and tested
- Total Phosphorus (TP) Water Quality Standard Development and Defense
 - author of Jan. '04 report debunking inverse relationship argument cited by FDEP to ERC
 - assisted in preparation of FDEP's ERC refutation presentation and memorandum
- Everglades Mercury Cycling Models (I & II)
 - contractor modified both to add my regression relationships between water TP & micro- & macrophyte properties absent mechanistic equivalent in Everglades Landscape Model
 - USEPA/ORD applied modified EMCM(I) to evaluate RESTUDY methylmercury risks
 - co-Project Manager of FDEP cooperative agreement to modify and apply EMCM(II) to quantification of ecorisks from alleged inverse relationship between water TP and fish Hg
- STA-2 Methylmercury Anomaly
 - designed and documented 1st, 2nd, & 3rd first-flush methylmercury anomaly studies
 - authored technical "white paper" supporting District petition to allow operation of Cell 1 in flow-through mode to expedite system stabilization while minimizing fish-eating wildlife risks
 - sole, first, or co-author of papers and presentations on mercury species mass budgets, and static and dynamic bioaccumulation, exposures, and ecotoxicological risks
 - first author of draft paper on equipment I modified for ultra-trace Hg pore water sampling
- Everglades Agricultural Area Storage Reservoir Project (EAASRP)
 - proposed mercury and sulfate performance measures adopted by PDT
 - designed and documented baseline soil mercury monitoring and methylmercury bioaccumulation bioassay studies for permit application reasonable assurance
 - soil baseline study design adopted by CGM 42 for large-scale mercury/toxics screening
- Regional ASR Study/Pilot Project:
 - co-chaired committee that planned, budgeted for, and oversaw design and implementation of RASR Study water quality monitoring, modeling and toxicity studies
 - prepared responses to CROGEE comments on PMP Appendix L
- Water Quality Consultations
 - Bird Drive Recharge Area Pilot Project: co-authored monitoring and modeling plans
 - contributions to and peer review of RECOVER's Monitoring and Assessment Plan (MAP)

PROFESSIONAL EXPERIENCE

1991 – 2000: South FL. Water Management District, West Palm Beach, FL. Senior Supervising Env. Scientist. Tom Fontaine, Garth Redfield, Linda Lindstrom and Susan Gray, Supervisors.

Regulatory and policy applications of environmental chemistry and toxicology to environmental remediation, restoration and protection.

Responsibilities

- Planned, budgeted and supervised staff or managed contracts for:
 - water, sediment, and soil quality monitoring, special studies, research, modeling, assessment, and reporting for nutrients and toxicants, with an emphasis on mercury
 - research into hydrological and media quality criteria to protect natural systems
- District Mercury Program Manager: 1992-93;1994-04
- Interagency Coordinator for South Florida Mercury Science Program (SFMSPP) :1996-00
- Chair, So. FL. Toxic Substances Roundtable: 1996-97
- Member, FDEP Task Force for Development of Freshwater Sediment Quality Criteria: 1999
- Water quality consultations on sources, fate, effects, and exposure modeling for Office of Counsel, Land Acquisition, and the C&SF Restudy

Major Accomplishments:

- Interagency Coordinator SFMSPP
 - first author SFMSPP Everglades Mercury Action Strategy, Plan of Study, and Fact Sheet
 - contributions to design and peer review of USEPA Region 4's REMAP I and II
 - organizer, chair and contributor for **SFMSPP Annual Workshop**, Sheraton Hotel, West Palm Beach, FL. April 1998.
 - co-organizer and contributor for **Workshop on Effects Assessment for Mercury in Fish-eating Birds: Setting an Avian Wildlife Criterion**, River Ranch, FL. October 1999
 - chaired inter-agency coordination mtgs; prepared/managed MOUs with USGS and FDEP
- Mercury Program Management
 - author of original and revised Work Plans for ENR Project Mercury Mass Balance Studies, Mercury Evaluation Study, and Mercury Research Plan
 - co-author, the Comprehensive Monitoring Program Plan for the Everglades
 - first author, Chapter 7: The Everglades Mercury Problem, The Everglades Interim Report (1999) and The Everglades Consolidated Report (2000)
 - obtained CWA Section 319 grant funds for ENR Project test cell Hg screening studies
 - implemented mercury elements of ECP Programmatic EIS and ECP & Non-ECP permits
 - developed mercury-related legal and technical arguments defending State and Federal ENR Project discharge permits
- Waste Treatment Technology Research and Development
 - co-author, Stormwater Treatment Area Optimization Research Program Plan
- Water Quality Criteria Research and Development
 - co-author, 5-Year Everglades Research Program Plan
 - second author, Nutrient Threshold Pilot Study Work Plan
- Foran, J. and Fink, L.E. Regulating Toxic Substances in Surface Water, Lewis Publishers, Boca Raton, FL. 1993

PROFESSIONAL EXPERIENCE

1988 - 1991: Science Applications International Corporation, McLean, VA.

Senior Environmental Scientist. Michelle Leslie, James Parker and Dennis Ford, Supervisors.

Regulatory and policy applications of environmental chemistry and toxicology to environmental remediation, restoration and protection. Clients: USEPA, DOE, DOD

Major Accomplishments:

- first author of *Technical and Management Options for Lakewide Management Planning*
- co-author, guidance document for sediment quality criteria development and application for USEPA's Office of Water Regulation and Standards
- contributions to development of bi-national TMDL for 2,3,7,8-TCDD for USEPA Region 10
- developed spreadsheet-based, screening-level mathematical models of:
 - pollutant runoff surface water impacts to support hazwaste disposal rule-making
 - volatile toxics risk assessment for proposed hazwaste rules and sediment disposal site
 - toxicant volatilization, decomposition, and settling for POTW waste disposal rule-making
- consulted on impacts of global warming to Great Lakes Basin water quantity and quality
- Fink, L.E. and Penn, M. 1991. Modeling Toxic Substances Target Load Reductions in the Great Lakes: Part I - The Great Lakes Water Quality Model and Part II - Evaluation of Resource Management Issues and Options. Report Submitted to the Great Lakes Natural Resources Center, National Wildlife Federation, Ann Arbor, MI. January.

1984 - 1987: U.S. Environmental Protection Agency, Chicago, IL.

GS-12 Chemist. Great Lakes National Program Office. Vacys Saulys, Supervisor.

Regulatory and policy applications of environmental chemistry and toxicology to environmental remediation, restoration and protection.

Responsibilities

- Consultations to and reports for International Joint Commission's Great Lakes Water Quality Board (GLWQB), Research Board, Water Quality Committee and Toxic Substances Committee to implement U.S.-Canada Great Lakes Water Quality Agreement (GLWQA)
- Peer review of Office of Water Regulations and Standards national technical guidance documents for toxicant water quality modeling, WQC documents and health advisories
- Independent technical analysis to support peer review of USACE and Great Lakes Regions, Provinces, and States draft NPDES wastewater discharge permits, draft EISs for dredge and fill activities, draft CERCLA RI/FS documents for Great Lakes Basin Superfund, RCRA, and TSCA sites, and Great Lakes Harbor Remedial Action Plans

Major Accomplishments:

- co-authored Region 5 response to federal court TMDL ruling in Scott v. City of Hammond
- awarded Bronze Medal for co-authoring *L. MI Toxic Pollutant Control/Reduction Strategy*
- developed and applied screening-level particle partitioning-based sediment quality criteria
- co-chair, "Battle of the Great Lakes Models" Workshop for Green Bay Mass Balance Study
- design, QA/QC, and report preparation for Upper Great Lakes Connecting Channels Study
- significant contributions to list of Dirty Dozen priority toxic substances for virtual elimination

PROFESSIONAL EXPERIENCE

1978 - 1984: Michigan Department of Natural Resources, Lansing, MI.

Chemist or Laboratory Scientist, Environmental Protection Bureau. Dennis Swanson and Jerry Saalfeld, Supervisors

Specialized in regulatory and policy applications of environmental chemistry and toxicology to environmental remediation, restoration, and protection.

Responsibilities:

- toxic substances hazard assessment, chemical manufacturing process evaluation, and environmental monitoring studies design for point source and waste disposal site permit applications, environmental assessments and impact statements, and enforcement actions
- CESARS database development, peer review and quality control of physicochemical data
- development and application of toxic substances water quality criteria and quantitative structure-activity relationships to estimate key unmeasured environmental fate properties
- common ion and metals quantitative analysis for surface, ground, and waste waters

Major Accomplishments

- Contributed to review and comment on Dow Chemical Company's Trace Chemistries of Fire" Report and the permit conditions and remediation requirements deriving therefrom
- Authored and defended in public hearings and written comments the first version of proposed revisions to Michigan Rule 1057: Toxic Substances Water Quality Standards banning the presence of all genotoxic substances and all substances for which toxicity testing or analytical methods were inadequate based on the precautionary principle
- Provided litigation support and process characterization study design and implementation for BASF-Wyandotte Chemical Company's on-and off-site toxic substances contamination.
- Innovated *in situ* sampler design to capture representative sample of chemical reactor contents during explosive depressurization of Dow Chemical Company reactors for Clean Air Act permit compliance..
- Parameterized screening-level water quality models to prioritize persistent, bioaccumulative, toxic substances (PBTs) for more detailed source, fate, and effects characterization and human and ecotoxicological risk assessment.

BOOKS, PUBLICATIONS, REPORTS, and FACT SHEETS

Darren G. Rumbold, D avid W. Evans, Sharon Niemczyk, Larry E. Fink, Krysten A. Laine, Nicole Howard, David P. Krabbenhoft and Mark Zucker. 2011. Source identification of Florida Bay's methylmercury problem: mainland runoff versus atmospheric deposition and *in situ* production. ESTUARIES AND COASTS Volume 34, Number 3, 494-513, DOI: 10.1007/s12237-010-9290-5

Rumbold, D.G and L.E. Fink. 2006. Extreme Spatial Variability and Unprecedented Methylmercury Concentrations within a Constructed Wetland. *Environ. Monitoring and Assessment*. 122(1-3): 115-135.

Fink, L.E., J. King, P. Adak, and F. Matson. 2005. Appendix 2B-2: STA-2 Mercury Special Studies Final Report. G. Redfield, ed. In: *2005 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL. January.

Fink, L.E. 2004. Appendix 2B-6: STA-6 Mercury Special Studies Interim Report. G. Redfield, ed. In: *2004 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL. January.

Fink, L.E. 2004. Appendix 2B-7: STA-2 Mercury Special Studies Interim Report. G. Redfield, ed. In: *2004 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL. January.

Fink, L.E. 2004. Appendix 2B-3: The Influence of Surface Water, Pore Water and Sediment on Methylmercury Production and Bioaccumulation in the Everglades. G. Redfield, ed. In: *2004 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL. January.

Fink, L.E. 2003. Appendix 2B-1: The effect of dryout and rewetting on mercury bioaccumulation. G. Redfield, ed. In: *2003 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL.

Fink, L.E. 2003. Appendix 2B-3: The Influence of Water and Sediment on Methylmercury Production and Bioaccumulation in the Everglades. G. Redfield, ed. In: *2003 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL. January.

Rumbold, D. and L. Fink. 2003. Appendix 4-2: Report on Expanded Mercury Monitoring at STA-2. G. Redfield, ed. In: *2003 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL

Rand, G.M., J.F. Carriger, T.A. Lee, R.J. Pfeuffer, and L.E. Fink. 2003. Sediment Toxicity in Central and South Florida Ecosystems. *Bull. Env. Toxicol. Chem.* 70: 494-501.

Fink, L.E. 2002. Appendix 2B-3: The Effect of Dryout and Rewetting on Mercury Bioaccumulation. G. Redfield, ed. In: *2002 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL.

Fink, L.E. 2002. Technical Analysis Supporting a Request for Modification/Variance from STA-2 Mercury Start-Up Criteria. Appendix 4A-7. *2002 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL.

Rumbold, D.G., L.E. Fink, K.A. Laine, S.L. Niemczyk, T. Chandrasekhar, S.D. Wankel and C. Kendall. 2002. Levels of Mercury in Alligators (*Alligator mississippiensis*) Collected along a Transect through the Florida Everglades. *Sci. Tot. Environ.*, 297:239-252.

Rumbold, D. and L. Fink. 2001. Annual Permit Compliance Monitoring Report for Mercury in Downstream Receiving Waters of the Everglades Protection Area. Appendix 2B-1. G. Redfield, ed. In: *2001 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL.

Fink, L.E. 2001. The Effect of Surface and Pore Water Quality on Mercury Bioaccumulation. Appendix 7-11. G. Redfield, ed. In: *2001 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL.

Krabbenhoft, D.P. and L.E. Fink. 2001. Appendix 7-8: The Effect of Drydown and Natural Fires on Mercury Methylation in the Florida Everglades. G. Redfield, ed. In: *2001 Everglades Consolidated Report*, South Florida Water Management District, West Palm Beach, FL.

Rumbold, D.G., L. Fink, K. Laine, F. Matson, S. Niemczyk and P. Rawlik. 2001. Appendix 7-9: Annual permit compliance Monitoring Report for Mercury in Stormwater Treatment Areas and Downstream Receiving Waters of the Everglades Protection Area. G. Redfield, ed. In: *2001 Everglades Consolidated Report*. South Florida Water Management District, W. Palm Beach, FL.

Rumbold, D.G., L. Fink, S. Niemczyk, and K. Laine. 2001. Appendix 7-12: Florida Bay Mercury Screening Study. G. Redfield, ed. In: *2001 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL.

Rumbold, D.G., L. Fink, K. Laine, F. Matson, S. Niemczyk, and P. Rawlik. 2001. Appendix 7-13: Stormwater Treatment Area 6 follow-up Mercury Studies. Appendix 7-13 G. Redfield, ed., In: *2001 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL.

Fink, L.E. 2001. Appendix 7-16: Mercury Restoration Evaluation Study in Stormwater Treatment Area 6. G. Redfield, ed. In: *2001 Everglades Consolidated Report*. South Florida Water Management District, West Palm Beach, FL.

Rumbold, D.G., S.L. Niemczyk, L.E. Fink, T. Chandrasekhar, B. Harkanson and K.A. Laine. 2001. Mercury in Eggs and Feathers of Great Egrets (*Ardea albus*) from the Florida Everglades. *Arch. Environ. Contam. Toxicol.*, 41:501-507.

Krabbenhoft, D.P., L.E. Fink, M.L. Olson and P.S. Rawlik, II. 2000. The Effect of Drydown and Natural Fires on Mercury Methylation in the Florida Everglades. Conf. proc., International Conference on Heavy Metals in the Environment. University of Michigan, Ann Arbor, MI, as cited in National Academy of Science's Re-engineering Water Storage in the Everglades: Risks and Opportunities (2000): http://www.nap.edu/openbook.php?record_id=11215&page=108

Fink, L.E. and P. Rawlik. 2000. "Chapter 7: The Everglades Mercury Problem." The Everglades Consolidated Report. South Florida Water Management District, West Palm Beach, FL. January.

Fink, L.E., D. Rumbold, and P. Rawlik. 1999. "Chapter 7: The Everglades Mercury Problem." The

Everglades Interim Report. South Florida Water Management District, West Palm Beach, FL. January.

Miles, C.J. and L.E. Fink. 1998. Monitoring and mass budget for mercury in the Everglades Nutrient Removal Project. Archives of Environ. Contam. and Toxicol. 35(4): 549-557.

Contributing author. 1997. Plan of Study for the South Florida Mercury Science Program. Draft. Florida Department of Environmental Protection, Tallahassee, FL. May.

Contributing author. 1997. Plan of Study for the South Florida Mercury Science Program. Fact Sheet. Florida Department of Environmental Protection, Tallahassee, FL. January.

Guardo, M., Abteu, W., Fink, L., and Cadogan, A. 1996. Water Budget Analysis for the Everglades Nutrient Removal Project (August 19, 1994-August 19, 1996). South Florida Water Management District, West Palm Beach, FL. November.

Contributing author. 1996. Everglades Annual Report to the Legislature. South Florida Water Management District, West Palm Beach, Florida. October.

Fink, L.E. and Redfield, G. 1996. Mercury Contamination and South Florida Ecology. Newsletter of the Florida Lake Management Society. Spring.

Fink, L.E. and Miles, C.J. 1996. Mercury Mass Budget for the Everglades Nutrient Removal Project: August 18, 1994-August 17, 1995. S. Fl. Water Management District, W. Palm Beach, FL. March.

Fink, L., Guardo, M, and Cadavid, L. 1996. Water Budget for the Everglades Nutrient Removal Project: 1994-1995. Draft. S. Florida Water Management District, West Palm Beach, FL. March.

Mortellaro, S., Krupa, S., Fink, L. and VanArman, J. 1995. Literature Review on Effects of Groundwater Drawdown on Isolated Wetlands. Tech. Pub. 96-01. S. Fl. Water Management District, W. Palm Beach, FL. November.

Guardo, M., Fink, L., Fontaine, T.D., Newman, S., Chimney, M., Bearzotti, R. and Goforth, G. 1995. Large-Scale Constructed Wetlands for Nutrient Removal from Stormwater Runoff: An Everglades Restoration Project. Environmental Management 19(6): 879-889.

Contributing author. 1995. Everglades Annual Report to the Legislature. South Florida Water Management District, West Palm Beach, Florida. October.

Contributing author. 1994. Everglades Annual Report to the Legislature. South Florida Water Management District, West Palm Beach, Florida. October.

Foran, J. and Fink, L.E. 1993. Regulating Toxic Substances in Surface Water, Lewis, Boca Raton, FL.

Fink, L.E. and Penn, M. 1991. Modeling Toxic Substances Target Load Reductions in the Great Lakes: Part I - The Great Lakes Water Quality Model and Part II - Evaluation of Resource Management Issues and Options. Report Submitted to the Great Lakes Natural Resources Center, National Wildlife Federation, Ann Arbor, MI. January.

Palmer, K.J.M. and Fink, L.E. 1990. Promoting Pollution Prevention in the Great Lakes Basin by Establishing Geographically Focused Pilot Projects. Hazardous Material Control Research Institute. Cleveland, OH. September.

Fink, L.E. 1990. Dioxin Biogeochemistry for Water Quality Modeling. Draft Report to the Water Management Division, USEPA Region X, Seattle, WA, by Science Applications International Corporation, McLean, Virginia. Contract No. 68-C8-0066, WA No. C-1-70(P). August.

Fink, L.E., Claff, R.E., and Rana, P. 1990. Indicator Parameters in the NPDES Permit Program: PCDDs and PCDFs In Bleach Kraft Mill Effluents. Draft Report submitted to the Water Management Division, USEPA Region X, Seattle WA, by SAIC, McLean, Virginia. August.

Fink, L.E. 1990. Evolution of the U.S. Risk Assessment Process: How Conservative is Risk Assessment? Proceedings of HazMat International 1990, Atlantic City, New Jersey. June.

Nichols, B.L., Fink, L.E., Alexander, R. and Manring, J. 1989. Generic Risk Assessment of Kinetic Energy Penetrator Manufacture, Testing and Recycling Activities. Report submitted to the U.S. Army Production Base Modernization Activity Program, Picatinny Arsenal, New Jersey. November.

Fink, L., Mills, C., Leslie, M., Mooney, E., Mahler, J., Lahvis, G. and Kay, G. 1989. Technical and Management Options for Lakewide Management Planning. Report to the Great Lakes National Program Office, U.S. Environmental Protection Agency, Chicago, IL, by Science Applications International Corporation, McLean, VA, under EPA Contract 68-04-5041; WA GL88-30. June.

Fink, L.E., and Wise, P.L. 1988. A Mass Balance Approach to Water Quality Management in the Great Lakes Basin Tributaries. Protection of River Basins, Lakes and Estuaries: Fifteen Years of Cooperation Toward Solving Environmental Problems in the USSR and USA, U.S.-U.S.S.R. Agreement on Cooperation in the Field of Environmental Protection, R.C. Ryans (Ed), Published for the USEPA by the American Fisheries Society, Bethesda, MD, USA.

Collin, R. and Fink, L.E. 1988. Report on Modeling the Load-Concentration Relationship for Critical Pollutants in the Great Lakes. Task Force on Chemical Loadings, Toxic Substances Committee, International Joint Commission, Windsor, Ontario, Canada. October.

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PRESENTATIONS and POSTERS

A Scientific Critique of the Proposed Federal Clean Water Act Mercury Total Maximum Daily Load for the State of Florida. International Conference on Mercury as a Global Pollutant. Edinburgh Conference Center, Edinburgh, Scotland. August 2013.

A Trophodynamic Model of Methylmercury Bioaccumulation following a First-Flush Anomaly in a Constructed Wetland in South Florida: Florida: Part 1. Model Development Using Structural Sensitivity Analysis. Conference on Greater Everglades Ecosystem Restoration, Naples Grand Hotel, Naples, FL. July 2010.

Session Chair, "Unifying Concepts in Environmental Restoration Planning." Conference on Greater Everglades Ecosystem Restoration, Naples Grand Hotel, Naples, FL. July 2010.

Bioenergetics as a Unifying Concept in Environmental Restoration Planning. Conference on Greater Everglades Ecosystem Restoration, Naples Grand Hotel, Naples, FL. July 2010.

Co-author, Unifying Concepts in Environmental Restoration Planning: Quality Assurance & Quality Control. Conference on Greater Everglades Ecosystem Restoration, Naples Grand Hotel, Naples, FL. July 2010.

South Florida Mercury Science Program: Lessons Learned 1995-2004. Society of Environmental Toxicology and Chemistry Annual Meeting. Tampa, FL. November 2008.

Development and Application of a One-Compartment Bioaccumulation Model for Disaggregating the Effect of Sediment Organic Carbon Content on Feeding Rate from the Effect on Toxicant Bioavailability in the Mudworm (*Lumbriculus variegatus*). Mercury as a Global Pollutant, Monona Terrace Convention Center, Madison, WI. August 2006.

Intra-and Intercorrelations among Soil Constituents and MeHg Bioaccumulation in the Mudworm (*Lumbriculus variegatus*) Exposed to a Set of South Florida Peat Soils in a 28-Day Wet Soil Bioassay. Mercury as a Global Pollutant, Monona Terrace Convention Center, Madison, WI. August 2006.

Intercorrelations between Soil Constituent Concentrations and the Model-Inferred Methylmercury Bioaccumulation Efficiency by the Mudworm (*Lumbriculus variegatus*) Exposed to a Set of South Florida Peat Soils in a 28-Day Wet Soil Bioassay. Mercury as a Global Pollutant, Monona Terrace Convention Center, Madison, WI. August 2006.

Application of a Time-Dependent, Multi-Trophic Level Bioaccumulation Model to the Evaluation of Methylmercury Concentration Dynamics in the Mosquitofish (*Gambusia holbrooki*) following an Unprecedented Methylmercury Anomaly in a South Florida Constructed Wetland. Mercury as a Global Pollutant, Monona Terrace Convention Center, Madison, WI. August 2006.

Development of a Model of Fickian Diffusive Transport of Uncharged Molecules across the Gill Membrane Based on Steady-State Partitioning among Organs and Tissues Relative to a Reference Ligand. Mercury as a Global Pollutant, Monona Terrace Convention Center, Madison, WI. August 2006.

Preparing for the Science Fair. Invited Speaker. Explorer Post 57. South Florida Water Management District, West Palm Beach, FL. September 2005.

Monitoring, Mass Budget, Bioaccumulation Modeling, and Risk Characterization of First-Flush Methylmercury Anomalies in an Everglades Constructed Wetland. 4th World Conference and 25th Annual Meeting. Society of Environmental Toxicology and Chemistry. Portland, OR. November 2004.

Mercury as a Water Quality Problem in South Florida. Guest Lecturer. Introduction to Water Quality. Palm Beach Community College, Lake Worth, FL. Fall Term. 2004.

Mercury in the Everglades System. Water Quality and Quantity Module. South Florida Earth Project Extension. Florida Earth Foundation. August 2004.

Mercury and STA/Reservoir Operations. Invited Speaker. Workshop on Incorporation of Fish and Wildlife Measures into Stormwater Treatment Area/Reservoir Design and Operation. U.S. Fish and Wildlife Service. Vero Beach, FL. June 2004.

Influence of Reflooding After Dryout/Burn on MeHg Production and Bioaccumulation in the Everglades and the STAs. Invited Speaker. U.S. Fish and Wildlife Service. Vero Beach, FL. June 2004.

A Cost-Effective Strategy for Extracting Pore Water: Sipper vs. Centrifugation Method. The Department of Defense Environmental Monitoring and Data Quality Workshop. Kaiser, R. M. and P. A. Zuloaga, Tetra Tech, Inc., and L. E. Fink, D. M. Struve, and M. F. Zhou. S. Fl. Water Management District, West Palm Beach, FL. Reno, NV. May 2004.

The Everglades Mercury Problem and Its Solution: A Decade of Successful Science in Support of Informed Restoration Decision Making. Florida Association of Environmental Professionals, Florida International University, North Miami, FL. November 2003.

Mercury Issues in South Florida. Guest Speaker Series. Florida International University, Miami, FL. September 2003.

Mercury Issues for CERP Projects. Project Design Team for the Everglades Agricultural Area Storage Reservoir Project. Florida Dept. Environmental Protection, Southeast District Office, West Palm Beach, FL. October 2002.

STA-2 Mercury Special Studies. Annual Peer Review Workshop, Everglades Consolidated Report, Radisson Hotel, West Palm Beach, FL. September 2002.

Everglades Construction Project (ECP) and Non-ECP Mercury Conditions Permit Compliance Annual Reports. Annual Peer Review Workshop, Everglades Consolidated Report, Radisson Hotel, West Palm Beach, FL. September 2002.

Preparing for the Science Fair. Invited Speaker. Explorer Post 57. South Florida Water Management District, West Palm Beach, FL. January 2002.

The Everglades Mercury Problem. Invited Speaker. Explorer Post 57. South Florida Water Management District, West Palm Beach, FL. September 2001.

EMAD Pesticide Monitoring Projects, Consultative Services, and Research Support. St. John's and South Florida Water Management District (SFWMD) Meeting on the Lake Apopka and District-Related Toxic Substances Research. SFWMD, West Palm Beach, FL. August 2002.

Mercury Levels in STA-2 Evaluation of the Evidence. Annual Peer Review Workshop, Everglades Consolidated Report, West Palm Beach, FL. September 2001.

Everglades Construction Project (ECP) and Non-ECP Mercury Conditions Permit Compliance Annual Reports. Annual Peer Review Workshop, Everglades Consolidated Report, West Palm Beach, FL. September 2001.

TOC Briefing on STA-2 Mercury Anomaly. Technical Oversight Committee. South Florida Water Management District, West Palm Beach, FL. May 2001.

STA-2 Mercury Workshop. Permit Compliance-Mandated Meeting. Federal and State Permit Issuing Authorities, Florida Fish and Wildlife Conservation Commission, and Everglades Construction Project Senior Management, South Florida Water Management District (SFWMD), SFWMD, West Palm Beach, FL. February 2001.

Mercury Restoration Evaluation Study in Stormwater Treatment Area 6. Annual Peer Review Workshop, Everglades Consolidated Report, West Palm Beach, FL. October 2000.

Everglades Construction Project (ECP) and Non-ECP Mercury Conditions Permit Compliance Annual Reports. Annual Peer Review Workshop, Everglades Consolidated Report, West Palm Beach, FL. October 2000.

The Effect of Dry Down and Natural Fires on Mercury Methylation in the Everglades. International Meeting on Heavy Metals in the Environment, University of Michigan League, Ann Arbor, MI. August 2000.

The South Florida Mercury Science Program: Goals, Progress, Needs. South Florida Mercury Science Program Annual Workshop, Weston Innisbrook Hotel, Tarpon Springs, FL. May 2000.

Everglades Construction Project (ECP) and Non-ECP Mercury Conditions Permit Compliance Annual Reports. Annual Peer Review Workshop II, Everglades Consolidated Report, South Florida Water Management District, West Palm Beach, FL. November 1999.

Everglades Construction Project (ECP) and Non-ECP Mercury Conditions Permit Compliance Annual Reports. Annual Peer Review Workshop, Everglades Consolidated Report, West Palm Beach, FL. September 1999.

The South Florida Mercury Science Program: Five-Year Status Report. South Florida Mercury Science Program Annual Workshop, Sheraton Buckhead Hotel, Atlanta, GA. June 1999.

The Everglades Mercury Problem: Achilles Heal of the Everglades Restoration Effort? Poster Presentation. Science Symposium on South Florida Ecosystem Restoration, U.S. Geological Survey, Boca Raton, FL. May 1999.

Science-Management Links in Understanding and Solving the Everglades Mercury Problem. Platform Presentation. Science Symposium on South Florida Ecosystem Restoration, U.S. Geological Survey, Boca Raton, FL. May 1999.

The Everglades Mercury Action Strategy. Governing Board Workshop, South Florida Water Management District, West Palm Beach, FL. May 1999.

Everglades Construction Project (ECP) and Non-ECP Mercury Conditions Permit Compliance Annual Reports. Annual Peer Review Workshop, Everglades Interim Report, West Palm Beach, FL. September 1998.

Screening-Level Ecological Risk Assessment for Mercury in the Everglades. South Florida Mercury Science Program Annual Workshop, Sheraton Hotel, West Palm Beach, FL. April 1998.

Mercury Mass Budget Studies for the Everglades Nutrient Removal Project: Reducing Uncertainty in the Inflow Load. Masters in Engineering Program. School of Engineering, Massachusetts Institute of Technology, Cambridge, MA. November 1997.

Mercury Research in the Everglades: Observations and Opportunities. Colloquium. Water Resources and Environmental Engineering Program, Massachusetts Institute of Technology, Cambridge, MA. November 1997.

Mercury Research in the Everglades. Colloquium. University of Florida. September 1997.

The Everglades Mercury Screening Program Plan of Study, Public Workshop, South Florida Water Management District, West Palm Beach, FL. July 1997.

Summary of the Everglades Mercury Problem Solving Process. Annual Meeting of the South Florida Mercury Science Program, Madison, WI. May 1997.

The South Florida Mercury Media Quality Criteria Development Project. Annual Meeting of the South Florida Mercury Science Program, Madison, WI. May 1997.

Mercury Mass Budgets for the Everglades Nutrient Removal Project. Annual Meeting of the South Florida Mercury Science Program, Madison, WI. May 1997.

Interagency Research on the Mercury Problem in South Florida. Florida Lake Management Society Annual Meeting, Jupiter Island, FL. May 1997.

Career Opportunities in Environmental Science and Engineering. Cardinal Newman High School, West Palm Beach, FL. April 1997.

The South Florida Water Management District's Mercury Studies Program, Everglades Technical Advisory Committee (ETAC), West Palm Beach, FL. April 1997.

Benefits and Detriments of the Everglades Construction Project, Meeting with the Sugar Cane Growers Cooperative, West Palm Beach, FL. March 1997.

Everglades Nutrient Removal Project Mercury Monitoring and Research Studies -- Summary of Projects and Results. Environmental Regulation Commission, Tallahassee, FL. January 1997.

Derivation and Practical Applications of Sediment Quality Criteria. South Florida Toxic Substances Roundtable, West Palm Beach, FL. October 1996.

History of Toxic Substances Monitoring in South Florida. Toxic Substances Workshop. Governing Board of the South Florida Water Management District, West Palm Beach, FL. June 1996.

The Plan of Study for the South Florida Mercury Science Program. Mercury Planning Meeting, Jacksonville, FL. May 1996.

Screening-Level Model of Mercury Deposition in Wetlands. All-Investigators Annual Meeting of the South Florida Mercury Science Program, Orlando, FL. April 1996.

Food Chain Model of Mercury Bioaccumulation and Disposition in the Florida Panther. All-Investigators Annual Meeting of the So. Fl. Mercury Science Program, Orlando, FL. April 1996.

Screening-Level Model of Mercury Deposition in Wetlands. Annual Meeting of the American Chemical Society. Chicago, IL. August 1995.

Food Chain Model of Mercury Bioaccumulation and Disposition in the Florida Panther. Annual Meeting of the American Society of Limnology and Oceanography, Miami, FL. June 1994.

A Model of Mercury Bioaccumulation and Disposition in the Florida Panther. Poster Session. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Houston, TX. November 1993.

Mercury Research Strategy for the Everglades. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Cincinnati, OH. November 1992.

A Toxic Substances Management Strategy for the Great Lakes. Annual Meeting of the International Association for Great Lakes Research. Buffalo, NY. May 1991.

Regulatory Applications of Cancer Risk Assessment. Guest Lecture, Toxicology, Professor Christine Eccles, Department of Pharmaceutical Chemistry and Toxicology, School of Pharmacy, University of Maryland, Baltimore, MD. December 1990.

Sources of Uncertainty in Cancer Risk Assessment. Guest Lecture, Seminar in Applied Toxicology, Dr. Venkat Rao, Department of Biology, George Mason University, Fairfax, VA. November 1990.

Target 2000: Lakewide Management Planning - The Future Is Now. Lakewide Management Planning Workshop, sponsored by USEPA's Great Lakes National Program Office and Environment Canada's Ontario Regional Office, Chicago, IL. April 1989.

A Procedure for Deriving Risk-Based Sediment Quality Criteria. General Approach and Site-Specific Application. Poster Session, Annual Meeting of the Society of Environmental Toxicology and Chemistry, Arlington, VA. November 1988.

A Screening Level Model for Tributyltin Criteria. USA-USSR Symp., Athens, GA. October 1987.

Risk Assessment and Human Health. Nat'l. Ass. of Environ. Professionals, Chicago, IL. April 1987.

Potential Limitations in the Application of Simplified Lake and Stream Models to Substances with High Bioaccumulation Factors and High Partition Coefficients. Annual Meeting of the Society of Environmental Toxicology and Chemistry, Arlington, VA. November 1986.

A Toxic Substance Source Reduction Strategy for the Great Lakes. International Association for Great Lakes Research, Toronto, Ontario, Canada. May 1986.

Water Quality Criteria-Based Sediment Disposal Criteria. International Association for Great Lakes Research, Milwaukee, WI. May 1985.

Fink, L.E. Toxic Chemicals and their Cycling in the Environment. Conference Proceedings, Contamination of Groundwater Supplies with Toxic Chemicals: Causes, Effects, and Prevention. Water Research Institute, Michigan State University, Lansing, Michigan. March 1980.