

# Donald F. Hayes, Ph.D., P.E., DEE

Civil Engineering, University of Louisiana at Lafayette  
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## RESEARCH INTERESTS

### Contaminated sediments

Environmental impacts of dredging, managing contaminated sediments, sediment treatment options

### Coastal Restoration and Protection

Engineering design of wetlands restoration projects, use of dredged sediments for restoration, water quality considerations, sediment quality

### Surface water quality

Fate and transport of suspended sediments and toxic constituents, TMDL assessment, watershed management

### Systems analysis applications

Reservoir operations, stormwater management, water quality implications

## EDUCATION

### Ph.D., Civil Engineering, Colorado State University, December 1990

Environmental Engineering and Water Resources Planning and Management

### M.S., Civil Engineering, Mississippi State University, December 1986

### B.S. (honors), Civil Engineering, Mississippi State University, Dec. 1981

## EMPLOYMENT HISTORY

**1/07 – present** Director, Institute for Coastal Ecology and Engineering  
UNOCAL/BORSF Professor of Civil Engineering  
Department of Civil Engineering  
University of Louisiana at Lafayette  
Lafayette, LA

**9/94 – 12/06** **Assistant/Associate Professor**  
Environmental & Water Resources Engineering Leader  
Department of Civil & Environmental Engineering  
University of Utah, Salt Lake City, UT

**8/02 – 8/03** **Research Associate**  
(sabbatical leave) HR Wallingford, Ltd.  
Wallingford, UK

**8/91 to 8/94** **Assistant Professor**  
Department of Civil Engineering  
University of Nebraska – Lincoln  
Omaha, NE

**8/87 to 8/91** **Research Civil Engineer**  
Environmental Engineering Division  
Environmental Laboratory  
USAE Waterways Experiment Station  
Vicksburg, MS

**8/86 to 8/87** **Ph.D. Student**  
Civil Engineering Department, Colorado State University  
Fort Collins, CO

**1/82 to 8/86** **Civil Engineer**  
Environmental Engineering Division  
Environmental Laboratory  
USAE Waterways Experiment Station  
Vicksburg, MS

**AWARDS AND  
NOMINATIONS**

2006 Outstanding Educator Award, American Water Resources Association, Utah Section.

Diplomate, American Academy of Environmental Engineers, invited based upon Eminence, November 2004.

Utah Civil Engineering Educator of the Year, 2001. Utah Section, ASCE

Best Paper Award, Dredging Contractors of America, WEDA XX/TAMU 32<sup>nd</sup> Annual Dredging Conference, Providence, RI, June 2000.

Outstanding Teaching Recognition, University of Utah, 1994-95, 1995-96, 1997-98, 1998-99, 1999-2000, 2000-2001, and 2001-2002.

Civil Engineering Department Nominee, College of Engineering and Technology Teaching Award, University of Nebraska-Lincoln, 1993.

Graduate Faculty Member, University of Nebraska-Lincoln (1992)

Waterways Experiment Station, Long-Term Training Fellowship, 1986-87.

USACE Performance Awards, 1980, 1983, 1988, 1990, 1991

Chi Epsilon Honor Society (President)

Tau Beta Pi Honor Society

**SIGNIFICANT  
PROFESSIONAL  
ACTIVITIES**

Member, Great Salt Lake Selenium Science Panel, October 2004 - present

Member, *Drinking Water Board*, State of Utah, 1996 – 2002 (Gubernatorial appointment).

SDWA Revolving Fund Loan Review Committee, *Utah Drinking Water Board*, 1997 – 2002.

Member, *Committee on Contaminated Marine Sediments, Marine Board*, National Academy of Engineering, 1992-1996.

Chair, *Innovative Technologies for Managing Contaminated Sediments Workshop*, sponsored by the National Academy of Engineering, April 1994, Chicago, IL.

Conference Chair, *From Swamps to Wetlands*, Center for Wetlands and Riparian Design, Salt Lake City, UT, October 1998 (250 registrants).

Official Delegate, *16<sup>th</sup> US/Japan Experts Meeting on Management of Bottom Sediments Containing Toxic Substances*, October 1993, Kitakyusu, Japan.

Committee Member, *Impact of Construction Materials on Surface and Groundwater Quality*, National Cooperative Highway Research Program (NCHRP) Research Panel 25-9, 1993 – 2000. Salt Lake City Watershed Management Advisory Committee, May 2000 - present.

Utah TMDL Task Force, Department of Environmental Quality, 1998 - Present.

Member, *Lake Powell Water Quality Improvement Technical Advisory Committee*, 1997 - present.

**PROFESSIONAL  
ORGANIZATIONS  
& ACTIVITIES**

**Registered Professional Engineer, State of Mississippi (#09728)**

**American Society of Civil Engineers**

- Chair, *Wetlands and River Restoration Committee*, Coastal, Oceans, Ports, and Rivers Institute (COPRI), 1999 – 2004.
- Technical Program co-chair (with David Stevens, USU), Environmental and Water Resources Institute Annual Water Congress, Salt Lake City, UT, June 2004.
- America’s Wetland Task Committee, 2002-2004.
- Conference Co-chair (with J. Craig Fischenich), *2<sup>nd</sup> ASCE Wetlands Engineering and River Restoration Specialty Conference*, August 2001, Reno, NV.
- Conference Co-Chair (with J. Craig Fischenich), *1998 ASCE Wetlands Engineering and River Restoration Specialty Conference*, March 22-27, 1998, Denver, CO.

**American Water Resources Association**

- President, Utah Section, 2004-05
- Technical Program Chair, *Decision Support Systems in Water Resources Management*, AWRA Conference, June 2001, Salt Lake City, UT.

**Water Environment Federation**

- Chair, Student Activities Committee, Utah Section, 1997 – 2002

**Western Dredging Association**

- Member, Environmental Commission, 1999 - present.
- Editorial Board, *Journal of Dredging Engineering*, 1999 – present.

**INVITED  
PRESENTATIONS  
& KEYNOTE  
ADDRESSES**

“Dredging and Dredged Material Management,” NATO Advanced Research Workshop, Comenius University, Bratislava, Slovakia, May 18-21, 2005.

“Remediation PCB Contaminated Rivers: Decisions for Two Large US Rivers,” University of Ghent, Feb. 21, 2003, Ghent, Belgium.

“Dredging Contaminated Sediments,” NATO Pan American Advanced Studies Institute, Rio de Janeiro, Brazil, July 2002.

“Ecological Considerations for Sediment Remediation,” NATO Pan American Advanced Studies Institute, Rio de Janeiro, Brazil, July 2002.

“Role of Dredging in Remediating PCB-Contaminated Sediments,” *Committee on Remediation of PCB-Contaminated Sediments*, National Research Council, Sept. 28, 1999, Green Bay, WI.

“Managing Contaminated Sediments in Ports and Waterways,” opening address (shared with Dr. Frank Bohlen, Univ. of Connecticut) to *National Symposium on Contaminated Sediments: Coupling Risk Reduction with Sustainable Management and Reuse*, May 27-29, 1999.

*Predicting Contaminant Release During Dredging Operations*, Workshop on Contaminated Sediment Remediation Options in the Port of New York and New Jersey, Rutgers University, February 1994.

**INVITED  
PRESENTATIONS  
& KEYNOTE  
ADDRESSES  
(continued)**

"Assessing Impacts of Environmental Dredging Operations," official US delegate and invited presentation at *16th U.S./Japan Experts Meeting on Management of Bottom Sediments Containing Toxic Substances*, Kitakyushu, Japan, October 1993.

"Anticipating Sediment Resuspension and Contaminant Release During Environmental Dredging Operations," *1992 International Environmental Dredging Symposium*, Buffalo, NY, Sept 1992.

**JOURNAL  
PUBLICATIONS**

Hong, P.K.; S. Nakra; J. Kao; and D. Hayes, "Pressure-assisted ozonation of PCB and PAH contaminated sediments," *Chemosphere*, 72 (2008) 1757–1764.

Choi, Y., K. Johnson, and D. Hayes, "Pilot Scale Aerated Submerged Bio-Film (ASBF) Reactor for Organics Removal and Nitrification at Cold Temperatures," *Water Environment Research*, Volume 80, Number 4, April 2008, pp. 292-297.

Choi, Y., D. Hayes, and K. Johnson "Mathematical Model Evaluation on Batch Aerated Submerged Biofilm (ASBF) Reactor for Organic Carbon and Nitrogen Removal", *Korean J. Chem. Eng.* 24(4), 655-640 (2007).

Je, C.H.; Hayes, D.F.; Kim, K.S. (2007). "Simulation of resuspended sediments resulting from dredging operations by a numerical flocculent transport model, *Chemosphere* 70 (2007) 187–195.

T. Neville Burt and Donald F. Hayes, "Framework for Research Leading to Improved Assessment of Dredge Generated Plumes," *Terra et Aqua*, Number 98, pp. 20-31, March 2005.

Je, C.H. and D. F. Hayes, "Development of A Two-Dimensional Analytical Model for Predicting Toxic Sediment Plumes Due to Environmental Dredging Operations," *Journal of Environmental Science and Health, Part A*, Volume 39, Issue 8, December 2004, pages 1935 – 1947.

Reible, D.D., D. Hayes, C. Lue-Hing, J. Patterson, N. Bhowmik, M. Johnson, and J. Teal , "Comparison of the Long-Term Risks of Removal and In-Situ Management of Contaminated Sediments in the Fox River," *Journal of Soil and Sediment Contamination*, 12(3):325-344.

Wu, P.Y. and Hayes, D.F., "Verification and Modification of TSS Source Strength Models for Hydraulic Cutter Dredging Operations," *World Dredging and Marine Construction*, August 2000.

Robins, J.P., Rock, J., Hayes, D.F., and Laquer, F.C., "Nitrate Removal From Synthetic Platte Valley, Nebraska Groundwater Using A Constructed Wetland Model," *Environmental Technology*, Volume 21, No. 6, June 2000.

Hayes, D.F., T.R. Crockett, and T.J. Ward, "Near-Field Sediment Resuspension During Cutterhead Dredging Operations," *ASCE Journal of Coastal, Ports, and Waterways*, Vol. 126, No. 3, May/June 2000.

Hayes, D.F., Labadie, J.W., Sanders, T.G., and Brown, J.K., "Optimal Hydrosystem Operation for Downstream Water Quality," *Water Resources Research*, March 1998.

**JOURNAL  
PUBLICATIONS**

Kuo, A.Y. and Hayes, D.F., "A Model for Turbidity Plume Induced by Bucket Dredge," *ASCE Journal of Waterways, Port, Coastal, and Ocean Engineering*, November 1991.

J. Selke, D. Hayes, and D. Stevens (editors), *Critical Transitions in Water & Environmental Resources Management*, American Society of Civil Engineers, Proceedings of the 2004 World Water and Environmental Congress, June 2004 (CD-ROM).

America's Wetland Task Committee, *Restoring Coastal Louisiana: Enhancing the Role of Engineering and Science in the Restoration Program*, American Society of Civil Engineers, 2004, ISBN 0-7844-0736-3.

Malcolm Pirnie and TAMS/EarthTech, *Hudson River PCBs Superfund Site: Engineering Performance Standards*, US Environmental Protection Agency, April 2004. (co-author of most sections and primary technical responsibility for document)

D. Hayes and M. McKee (editors), *Decision Support Systems for Water Resources Management*, American Water Resources Association, Proceedings of the AWWA/UCOWR 2001 Summer Specialty Conference.

Hayes, D.F. (editor), *Designing Successful Stream and Wetland Restoration Projects*, American Society of Civil Engineers, Proceedings of the 2<sup>nd</sup> ASCE Wetlands Engineering and River Restoration Conference, August 2001 (CD-ROM).

Hayes, Donald F., "Semi-quantitative Assessment of Water Quality Impacts Associated with Dredging Activities," Appendix E.6, *Hudson River PCBs Reassessment RI/FS*, USEPA Region 2 and US Army Corps of Engineers Kansas City District, December 2000.

Hayes, D.F., T.J. Olin, J.C. Fischenich, and M.R. Palermo, *Wetlands Engineering Handbook*, U.S. Army Corps of Engineers, June 2000, 812 pages (including appendices).

Hayes, D.F. (editor), *Engineering Techniques for Wetland and Riparian Engineering*, American Society of Civil Engineers, Proceedings of the 1998 Wetlands Engineering and River Restoration Conference, December 1998, 1150 pages (CD-ROM).

Hayes, D.F. (editor), *Presentation Summaries for the 1998 Wetlands Engineering and River Restoration Conference*, American Society of Civil Engineers, March 1998, 193 pages.

National Research Council, *Contaminated Sediments in Ports and Waterways: Cleanup Strategies and Technologies*, National Academy Press, Washington, D.C., March 1997, 295 pages. (co-author)

USDA Soil Conservation Service, *Wetland Restoration, Enhancement, or Creation*, USDA Soil Conservation Service, January 1992, 79 pages. (co-author)

Palermo, M.R. and Hayes, D.F., "Environmental Effects of Dredging," in *Handbook of Coastal and Ocean Engineering*, Gulf Publishing Company, Houston, Texas, January 1992, pp. 1169-1175 (7 pages).

**BOOKS, BOOK  
CHAPTERS, &  
SPECIAL  
PUBLICATIONS**

**REFEREED  
CONFERENCE  
PUBLICATIONS**

Averett, D.E., Hayes, D.F., and Schroeder, P.R., "Estimating Contaminant Losses During Dredging," *Proceedings of the 15<sup>th</sup> World Dredging Congress, Las Vegas, NV, July 1998.*

Hayes, D.F., "Water Quality Management During Low-Flow Periods: A Systems Analysis Approach," in *Computerized Decision Support Systems for Water Managers*, ASCE Press, 1989.

**SOFTWARE  
RELEASES  
SOFTWARE  
RELEASES**

**CDF Design** Versions 2.0 released October 2004

Description: Complete rewrite of prior DOS version (named SETTLE) plus incorporation of hydraulic efficiency estimating routines and updated settling data analysis methods. Evaluates sedimentation test data and performs "state-point" design of confined dredged sediment disposal facilities.

Availability: Distributed by the U.S. Army Corps of Engineers for internal and public use.

**DREDGE** Version 2.0 released December 1999

Description: Windows application for estimating suspended sediment and contaminant concentrations resulting from environmental dredging operations; intended for a priori assessments.

Availability: Distributed by the U.S. Army Corps of Engineers for internal and public use.

**Cumberland River Optimization Model** Version 1.0, released July 1995

Description: Determines optimal daily releases from the nine major reservoirs in the Cumberland River to meet downstream water quality criteria during low-flow periods

Availability: Site-specific use only; not available for public use.

**SETTLE** Version 3 released in 1993, previous versions released in 1988 and 1985.

Description: Evaluates sedimentation test data and performs "state-point" design of confined dredged sediment disposal facilities.

Availability: Distributed by the U.S. Army Corps of Engineers for internal and public use.

**PCDDF USER INTERFACE** released in 1988

Description: PCDDF is a finite difference program that estimates long-term subsidence of dredged sediments in confined disposal facilities.

Availability: Distributed by the U.S. Army Corps of Engineers for public use from 1988 – 1994; now replaced by PSDDF which is a newer, more capable program developed by Dr. Timothy Stark, University of Illinois.

**INVENTIONS**

*Remediation with Ozone of Sediments Containing Organic Contaminants*, United States Patent # 7,115,203 issued October 3, 2006.

*In-Situ Sediment Ozonator for PCB Remediation*, United States Patent # 7,011,749 issued March 14, 2006.

Automated Water Quality Monitoring System for Dredging Operations, Invention Disclosure, August 1999.



**SHORT-COURSE  
LECTURES  
(since 2001)**

“Mechanical Dredging,” Texas A&M Dredging Short Course, College Station, TX, January 2003-2008.

“Dredging Contaminated Sediments,” National Science Foundation Pan-American Advanced Study Institute on In-Situ Assessment and Remediation of Contaminated Sites, July 22-August 2, 2002, Rio de Janeiro, Brazil.

“Ecological Considerations for Sediment Remediation,” National Science Foundation Pan-American Advanced Study Institute on In-Situ Assessment and Remediation of Contaminated Sites, July 22-August 2, 2002, Rio de Janeiro, Brazil.

“How to Use the Corps’ Wetlands Engineering Manual,” 2001 Society of Wetland Scientists Annual Meeting, Chicago, IL, June 2001.

**CONFERENCE  
PAPERS AND  
PRESENTATIONS**

Hayes, D.F., L. Hvasta, and W. Montgomery (2008). “Turbidity Barriers In Simple Flow Regimes,” Presented at WEDA XXVIII & TAMU 39, June 2008, St. Louis, MO.

Hayes, D.F., T.D. Borrowman, and P.R. Schroeder, “Process-based Estimation of Sediment Resuspension Losses During Bucket Dredging,” *Proceedings of the World Dredging Congress*, May 28 – June 1, 2007.

Palermo, M., Hayes, D., Reible, D., Verduin, J., Warren, S. and J. McAuliffe, “Onondaga Lake Sediment Remediation – Dredging And Capping Alternatives,” *Proceedings of the WEDA XXV and TAMU 37th Annual Conference*, New Orleans, LA, July, 2005.

**Fidler, B.;** Garvey, E.; Hayes, D; and Hess, A., “Hudson River Performance Standards: Protection and Production,” *Third International Conference on Remediation of Contaminated Sediments, 2005*.

Hayes, D.F. and P.K. Andy Hong, “Innovative Concept for In Situ Contaminated Sediment Remediation,” *Proceedings of the WEDA XXIV and TAMU 36th Annual Conference*, Orlando, FL, July 6-9, 2004.

Burt, T.N. and D.F. Hayes, “Framework for Research Leading to Improved Assessment of Dredge Generated Plumes,” *Proceedings of the WEDA XXIV and TAMU 36th Annual Conference*, Orlando, FL, July 6-9, 2004.

Herrenkohl, M.J., Hayes, D.F., Marnicio, R., and Lally, J., “Predicting Residual Contamination In Surface Sediments After Dredging,” *Proceedings of the 2003 Pacific Coast Chapter Annual Meeting*, Maui, HI, October 2003.

Burt, T.N. and D.F. Hayes, “US-UK Cooperation On Dredging Turbidity Modeling,” *Proceedings of the WEDA XXIII and TAMU 35th Annual Conference*, Chicago, IL, June 10-13, 2003.

Hayes, Donald F., “The Dredging Process: Opportunities to Avoid Windows,” *PIANC Environmental Windows Workshop: Achieving Dredging Decisions That Balance Economic And Environmental Concerns*, April 16, 2002, Vicksburg, MS. (Presentation Only)

**CONFERENCE  
PAPERS AND  
PRESENTATIONS**

Hayes, Donald F., "Toxic Constituent Losses During Dredging of Contaminated Sediments," *EPA Superfund Workshop on Contaminated Sediments*, Alexandria, VA, May 30-June 1, 2001.

Hayes, Donald F. and Wu, Pei-Yao, "Simple Approach to TSS Source Strength Estimates," *Proceedings of the WEDA XXI and TAMU 33<sup>rd</sup> Annual Conference*, Houston, TX, June 25-27, 2001.

Hayes, D., Borrowman, T., and Welp, T., "Near-Field Turbidity Observations During Boston Harbor Bucket Comparison Study," *Proceedings of WEDA XX and TAMU 32<sup>nd</sup> Annual Conference*, Providence, RI, June 2000.

Hayes, D.F., "Empirical Modeling of Flocculent Settling Processes," Water Environment Association of Utah Annual Conference, St. George, UT, April 1999.

Hayes, D.F., "Engineering for Successful Wetland Restoration," *Proceedings of the 1998 From Swamps to Wetlands Conference*, October 1998.

Hayes, D.F., "Designing Wetland Restoration Projects," Proceedings of the 1998 Water Environment Association of Utah Annual Conference, April 1998.

Hayes, D.F., "A Handbook for Designing Wetland Restoration Projects," *Proceedings of the 1998 Wetland Engineering and River Restoration Conference*, March 1998.

Hayes, Donald F., "Using ADDAMS to Design Wetland Restoration Projects," *Proceedings of the Corps of Engineers Workshop on Wetlands Restoration and Establishment, Baltimore, MD*, July 1997.

Hayes, Donald F., "Minimizing the Costs of Remediating Contaminated Sediments: Where Should Our Efforts Be Placed?," *Proceedings of the WERC/HSRC Joint Conference on the Environment*, Albuquerque, NM, April 22-24, 1997.

Hayes, Donald F., "Ensuring a Quality Non-Traditional Engineering Graduate Program," *Proceedings of the 1994 American Society of Engineering Education Midwest Section Meeting*, Lincoln, NE, March 1994.

Hayes, Donald F. and Douglas A. Heistercamp, "Ethical Considerations in Civil Engineering Software Development and Use," *First Congress on Computing in Civil Engineering*, ASCE, June 1994.

Hayes, Donald F., "Assessing Impacts of Environmental Dredging Operations," *Proceedings of The 16th U.S./Japan Experts Meeting on Management of Bottom Sediments Containing Toxic Substances*, Kitakyushu, Japan, October 12 - 14, 1993.

Hayes, Donald F., "Wetlands Engineering, Design, and Construction: Current Practices and Research Needs," *US Army Corps of Engineers Wetlands Engineering Workshop Proceedings*, St. Louis, MO, July 6-8, 1993.

Hayes, D.F., T.R., Crockett, and M.T. Arends, "Wetlands Engineering, Design, and Construction: State-of-the-Art and Research Needs," Proceedings of the 1993 ASCE WRPMD Annual Conference, *Water Management in the 90's: A Time for Innovation*, Seattle, WA, May 3-5, 1993.



**CONFERENCE  
PAPERS AND  
PRESENTATIONS**

Hayes, Donald F., "Anticipating Sediment Resuspension and Contaminant Release During Environmental Dredging Operations," **1992 International Environmental Dredging Symposium**, Buffalo, NY, September 1992.

Hayes, Donald F., "Environmental Implications of Reservoir System Design and Operation," Course materials for **Water Resource Development and Environmental Protection: Problems, Issues and Solutions**, Fort Collins, CO, July 1992.

Hayes, D.F. and M.R. Palermo, "Engineering Aspects of Wetland Design," **Proceedings of WATER FORUM '92**, American Society of Civil Engineers, Baltimore, MD, August, 1992.

Hayes, Donald F., "Operating Multireservoir Systems for Water Quantity and Quality," **Proceedings of the 102nd Annual Meeting of the Nebraska Academy of Sciences**, Lincoln, NE, April 1992.

Hayes, D.F., J.W. Labadie, and T.G. Sanders, "Optimal Operation of Multireservoir Hydropower Systems for Water Quality and Quantity," **Proceedings of the Fourth Water Resources Operations Management Workshop**, Mobile, AL, March 1992.

Zappi, P.A. and D.F. Hayes, "Innovative Technologies for Dredging Contaminated Sediments," **International Conference on Physical Modeling of Transport and Dispersion**, Cambridge, Mass., August 1990.

Brown, J.K. and D.F. Hayes, "Development of the Cumberland Basin Reservoir Model for Water Quality Control," **US Army Corps of Engineers Eighth Seminar on Water Quality**, February 1990.

Hayes, Donald F., "Water Quality Management During Drought Periods in the Cumberland River Basin," **Proceedings of the ASCE Water Resources for the Future: The Management Challenge Conference**, Sacramento, CA, May 1989.

Hayes, Donald F., "Water Resources Management during Drought Periods," **Proceedings of the Mississippi Water Resources Conference**, Jackson, MS, March 1989.

Hayes, Donald F., "Water Quality Management During Low-Flow Periods: A Systems Analysis Approach," **Proceedings of the 3rd Water Resources Operations and Maintenance Workshop, Computerized Decision Support Systems for Water Managers**, Fort Collins, CO, June 1988.

Hayes, D.F., McLellan, T.N., and G.R. Raymond, "Sediment Resuspension from Dredging Activities," **Proceedings of the ASCE Dredging '84 Specialty Conference**, Clearwater Beach, FL, November 1984.

Walski, T.M., D.F. Hayes, S.A. Pranger, and T.E. Schaefer, "Automated Dredging and Disposal Activities Management System (ADDAMS)," **Proceedings of the ASCE Dredging '84 Specialty Conference**, Clearwater Beach, FL, November 1984.

**TECHNICAL  
REPORTS**

Todd S. Bridges, Stephen Ells, Donald Hayes, David Mount, Steven C. Nadeau, Michael R. Palermo, Clay Patmont, and Paul Schroeder (2008). "The Four Rs of Environmental Dredging: Resuspension, Release, Residual, and Risk," ERDC/EL TR-08-4, Environmental Laboratory, US Army Engineer Research and Development Center, Vicksburg, MS 39180, January 2008.

Hayes, D.F., "Resuspension Factor Approach for Estimating Dredging-related Sediment Resuspension," Engineer Research and Development Center Technical Note DOER-Ex, September 2004. (in review)

Hayes, D.F., "Practicality of Dredging PCB-contaminated Sediments from Dick's Creek," Expert Report (letter form) to US Department of Justice, September 2004.

Hayes, D.F. and Herrenkohl, M.J., "Technically-based Cost Allocation for the Greens Bayou Stipulation Requirements," Expert Report in the matter of GB Biosciences and ISK-Magnetics vs. Occidental Chemical Corporation, July 2004.

Hayes, D.F., "Cost Allocation for the Greens Bayou Indemnity Agreement," Expert Report in the matter of GB Biosciences and ISK-Magnetics vs. Occidental Chemical Corporation, July 2004.

Hayes, D.F., "Evaluation of Dredging Alternatives for Onondaga Lake," Appendix L, Onondaga Lake Feasibility Study Report, Onondaga County, New York, May 2004

Hayes, D.F., "Dredging Contaminated Sediments at the Metal Bank NPL Site," Expert Report to US Department of Justice, February 2004.

Hartman, G.L., Hayes, D.F., and Herrenkohl, M.J., "Comprehensive Evaluation of Alternatives for Greens Bayou," Expert Report to Fulbright and Jaworski, LLP., April 30, 2003.

Hayes, Donald F., "Assessment of Stream Water Quality in the Vernon-Sheeprock Mountains," Final Report, Uinta National Forest, Orem, UT, September 2001.

Dearden, Mary and Hayes, Donald F., "Management Plan for BP Amoco SLC Wetland," final report to BP Amoco SLC Business Unit, May 2001.

Welp, T.; Hayes, D.; Tubman, M.; McDowell, S.; Fredette, T.; Clausner, J.; and Albro, C. "Dredge Bucket Comparison Demonstration at Boston Harbor," March 2001, Publication No. ERDC/CHL CHETN-VI35. Available at: <http://chl.erd.c.usace.army.mil/library/publications/chetn/pdf/chetn-vi-35.pdf>.

Hayes, Donald F., "Turbidity Monitoring During Boston Harbor Bucket Dredge Comparison Study," Final Study Report, submitted to USAE Waterways Experiment Station, Vicksburg, MS, August 1999.

Hayes, D. F. and C.H. Je, "User's Manual and Documentation for WinSETTLE," **Instructional Report**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, final report submitted June 1999.

Hayes, D. F., P. Wu, T. Heimdal, and M. Frear, "Drinking Water Quality in the US/Mexico Border Region," Final Report, Southwest Center for Environmental Research and Policy, September 1997.

**TECHNICAL  
REPORTS**

Hayes, Donald F., "Wetlands Creation Using Dredged Material in Tiger Pass, Louisiana," **Technical Report EL-98-xx**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, final report submitted August 1997.

Hayes, D.F. and Tang, Q., "Sedimentation Properties of White Rock Lake Sediments," Final Project Report, June 1997.

Hayes, D. F. and C.H. Je, "User's Manual and Documentation for DREDGE," **Instructional Report EL-97-xx**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, final report submitted August 1996.

Hayes, D. F. and D. Overbey, "Improvement of Reservoir Water Quality by Constructing Barriers, Wetlands, and Sediment Traps," Omaha District, US Army Corps of Engineers, December 1994.

Hayes, Donald F., "Design and Construction of Aquaculture Facilities in Dredged Material Containment Areas," **Technical Report EL-93-11**, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS, July 1993.

Hayes, Donald F., Timothy R. Crockett, and Michael T. Arends, "Wetlands Engineering: Review of Literature Related to the Enhancement, Restoration, and Creation of Wetlands," Research Project Report, University of Nebraska-Lincoln, February 1993.

Hayes, Donald F., "Documentation of the SETTLE Module for ADDAMS: Design of Confined Disposal Facilities for Solids Retention and Initial Storage," **Environmental Effects of Dredging Program Technical Note EEDP-06-18**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, December 1992.

Maynard, S.T., Landin, M.C., McCormick, J.W., Davis, J.E., Evans, R.A. and Hayes, D.F., "Design of Habitat Restoration Using Dredging Material at Bodkin Island, Chesapeake Bay, Maryland," **Wetlands Research Program Technical Report WRP-RE-3**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, June 1992.

Hayes, Donald F., "Documentation of the DYECON Module for ADDAMS: Determining the Retention and Hydraulic Efficiency of Confined Disposal Facilities," **Environmental Effects of Dredging Program Technical Note EEDP-06-17**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, 1992.

Hayes, Donald F., "Cumberland River Optimization Model: User's Guide and Program Documentation," Corps of Engineers Nashville District, Nashville, TN, December 1991.

Zappi, Paul A. and Donald F. Hayes, "Innovative Technologies for Dredging Contaminated Sediments," **Miscellaneous Paper EL-91-20**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, Sept. 1991.

Hayes, Donald F., "Operating Multireservoir Hydropower Systems for Downstream Water Quality," Ph.D. Dissertation, Department of Civil Engineering, Colorado State University, Fort Collins, CO, December 1990.

McLellan, T.N., R.N. Havis, D.F. Hayes, and G.R. Raymond, "Field Studies of Sediment Resuspension Characteristics of Selected Dredges," **Technical Report HL-89-9**, U.S. Army Engineer Waterways Experiment Station, CE,

**TECHNICAL  
REPORTS**

Vicksburg, MS, March 1989.

Hayes, Donald F., "Effects of Norfolk Harbor Deepening on Management of Craney Island Disposal Area," **Miscellaneous Paper EL-88-2**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, April 1988.

Hayes, Donald F., T.N. McLellan, and C.E. Truitt, "Demonstration of Innovative and Conventional Dredging Equipment at Calumet Harbor, IL," **Miscellaneous Paper EL-88-1**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, January 1988.

Hayes, Donald F., "Development of a Near Field Source Strength Model to Predict Sediment Resuspension from Cutter Section Dredges," Masters Thesis, Mississippi State University, Starkville, MS, December 1986.

Hayes, D.F., P.R. Schroeder, and M.R. Palermo, "Dredging as an Excavation Technique for the Gallipolis Locks and Dam Replacement Project," **Final Design Report, Gallipolis Locks and Dam Replacement Project**, U.S. Army Engineer District, Huntington, WV, November 1985.

Hayes, D.F., T.M. Walski, M.E. Corey, J.W. Epps, and S.A. Pranger, "ADDAMS (Automated Dredging and Disposal Activities Management System)," **Instructional Report**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, July 1985.

Raymond, G.R., D.F. Hayes, and T.N. McLellan, "Sediment Resuspension Characteristics of Conventional Dredges," **Engineering Technical Letter**, Office of the Chief of Engineers, Washington, D.C., September 1984.

Hayes, Donald F., "A Method for the Cost Analysis of Dredging and Disposal Alternatives in Norfolk Harbor," U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, December 1983.

Hayes, Donald F., "Engineering and Economic Comparison of Potential Dredged Material Disposal Sites within New York Harbor for Future Development into Marshlands," U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, December 1982.

Palermo, M.R., F.D. Shields, and D.F. Hayes, "Development of a Management Plan for Craney Island Disposal Area," **Technical Report EL-81-11**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, December 1981.

Hayes, Donald F., "Guide to Selecting a Dredge for Removal of Contaminated Bottom Sediments," **Environmental Effects of Dredging Program Technical Note EEDP-09-01**, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, MS, December 1986.

**GRANTS &  
FUNDED  
PROJECTS**

*Augmented Supercritical Fluid for Sediment Contaminants Degradation*, NOAA/CICEET, July 2005-June 2005, \$25,000.

*Selenium Speciation and Partitioning in Wetlands of the Great Salt Lake*, Utah Department of Environmental Quality, June 2005 – December 2006, \$114,203.

*Treatment of Asphaltene in Petroleum Byproducts and Oil Sand for Recovery of Chemicals*, Western Oil Sands, \$206,050, March 2005 – March 2007 (Co-PI with Andy Hong)

*In-Situ Sediment Ozonator (ISO) for PCB Remediation*, Planning Grant Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET) Environmental Technology Development, \$5,000, July 2002 – December 2002 (Co-PI with Andy Hong)

*Environmental Laboratory Equipment Gift (toward GC/MS)*, Honeywell Corporation, \$30,000, February 2004.

*Evaluation of Remedial Alternatives for Greens Bayou, TX*, GB Biosciences, \$204,000, October 2000 – December 2004.

*Design and Evaluation of a Test Section to Minimize Legacy Highway Impacts on Lateral Groundwater Flow and Great Salt Lake Wetlands*, Utah Department of Transportation, \$35,000, January 2001 – December 2003.

*Development of a Resuspension Matrix for Estimating Water Quality Impacts From Dredging Operations*, US Army ERDC Waterways Experiment Station, \$42,000, June 2002 to December 2003.

*Reducing Phosphorus Impacts on Lake Okeechobee Water Quality*, South Florida Water Management District, \$110,000, January 2001 – January 2003.

*Evaluation of Remedial Alternatives for Greens Bayou, Houston, TX*, GB Biosciences Corporation, \$75,000, October 2000 – December 2002.

*Anaerobic Digestions Aided by BioPac*, EnviroBact Technologies, \$4,868, November 1999 – June 2000.

*Monitoring of Turbidity Generation by Bucket Dredge Operations in Boston Harbor*, \$3,300, USAE Waterways Experiment Station, June 1999 – June 2000.

*A Methodology for Determining the Best Areas to Expand Wastewater Collection Systems in the US/Mexico Border Region*, EPA Southwest Center for Environmental Research and Policy, \$100,286 (with Bernardo Flores-Baez, Universidad Autonoma de Baja California and John Labadie, Colorado State University), June 1998 - May 2000.

*Design of a Wetland Systems for Migratory Bird Habitat and Water Quality Improvement in Association with Secondary for System Development*, City of Riverton, Utah, \$220,000 (with Carollo Engineers and Western Wetland Systems), September 1999 - August 2000.

*Development of a Water Quality Database for the Upper Colorado River Basin*, US Bureau of Reclamation, \$13,000, February 1999 - December 1999.



**GRANTS &  
FUNDED  
PROJECTS**

*Evaluation of Water Quality Impacts of Abandoned Mines in the Vernon-Sheeprock Mountains*, Uinta National Forest, \$10,803, September 1998 - September 1999.

*Comparative Evaluation of Wastewater Screens*, JWC Environmental, \$14,153 (with Robert Okey), October 1998 - April 1999.

*Water Quality Impacts of Contaminated Sediment Removal Using Hydraulic Dredges*, National Science Foundation, \$95,917, August 1998 - August 1999.

*Sedimentation Properties and Associated Mercury Release of Sediments from the Point Comfort Superfund Remediation Project*, Aluminum Company of America (ALCOA), \$31,000, November 1997 - December 1999

*Equipment Funds for Purchase of Hydrolab DataSonde 4 Water Quality Data Collection Field Instrument*, University of Utah Equipment Funds, \$7,750, August 1997.

*Relationship Between Water and Sediment Quality in the Jordan River*, Utah Research Foundation, \$6,100, July 1997 - December 1998.

*Faculty Computer Upgrade Funds*, Utah Technology Initiative, \$15,250, July 1997.

*Determination of Sedimentation Properties of White Rock Lake Sediments*, Carter-Burgess Consultants, Dallas Texas, \$5,000, April 1997.

*Update and Enhancement of the ADDAMS Modules SETTLE, DYECON, D2M2, and PSDDF*, USAE Waterways Experiment Station, \$88,975, June 1997 - June 1998 (partial funding of \$23,000).

*Wetlands Ecology and Ecology of the Wetlands/Transition Buffer Zones, Field and Laboratory Research*, unspecified amount, subcontractor to Louis Berger & Associates, East Orange, NJ, March 1997 - March 2002.

*Faculty Computer Upgrade Funds*, Utah Technology Initiative, \$9,500, July 1996.

*Wetland Creation Using Dredged Sediments in Tiger Pass, LA*, U.S. Army Research Office, \$13,000, August - December 1996.

*Faculty Assistance for Educational Technology and Distance Education, Instructional Technology Starter/Mentor Program*, July 1996 - June 1997, \$5,800 (co-PI with Dr. Peter T. Martin).

*Protocol for Aerobic Digestion*, Central Davis County Sewer District, \$3,634, Jan. - Sept. 1996 (co-PI with R.W. Okey).

*Assessment of Drinking Water Quality Problems and Concerns along the U.S./Mexico Border*, Southwest Center for Environmental Research and Policy (SCERP), \$45,000, June 1995 - June 1996.

*Development of a Model to Estimate Sediment Resuspension and Contaminant Release During Dredging Operations*, USAE Waterways Experiment Station, \$43,000, May - December 1995.

*Sediment Retention Processes in Wetland Systems*, AASERT Program, Army Research Office, \$140,000, July 1994 - June 1997.

**GRANTS &  
FUNDED  
PROJECTS**

*Preparation and Assimilation of Materials for a Wetlands Engineering Design Manual*, USAE Waterways Experiment Station, \$60,000, January 1994 - September 1996.

*Improvement of Reservoir Water Quality by Constructing Barriers, Wetlands, and Sediment Traps*, Omaha District, US Army Corps of Engineers, \$19,000, April 1994 - December 1994.

*Initial Development of an Automated Procedure for Sediment Resuspension and Contaminant Release Calculations*, USAE Waterways Experiment Station, \$8,600, August - September 1993.

*Sediment Resuspension and Contaminant Release During Dredging Operations*, USAE Waterways Experiment Station, \$25,501, January - December 1993.

*Travel Grant for Presentation and Participation in 1992 International Environmental Dredging Symposium*, Erie County, NY, \$800, September 1992.

*Housing, per diem, and materials grant for participation in Constructed Wetlands for Wastewater Treatment Workshop*, National Science Foundation Faculty Enhancement Program, Colorado State University, July 1992 and July 1993.

*Documentation and Testing of the ADDAMS (Automated Dredging and Disposal Alternatives Management System) Modules - SETTLE and DYECON*, USAE Waterways Experiment Station, \$20,191, May - September 1992.

*Review and Synopsis of Existing Literature and Ongoing Studies Involving Wetlands Engineering for Enhancement, Restoration, or Creation Activities*, USAE Waterways Experiment Station, \$20,704, May - September 1992.

*Enhancement of Cumberland River Optimization Model and Preparation of User's Guide*, USAE Waterways Experiment Station, \$30,800, September 1991 - December 1992.

**GRADUATE  
STUDENTS  
(COMPLETED)**

**Doctor of Philosophy**

Chung-Hwan Je, December 1998, *Suspended Sediment Transport Considering Fine-particle Flocculation*, University of Nevada- Reno, Reno, NV.

David J. Kinnear, December 2002, *Hydrodynamic Modeling of Return Activated Sludge Density in Secondary Clarifiers*, Vice President and Wastewater Technical Director, HDR, Inc., Charlotte, NC.

Pei-Yao Wu, May 2003, *Partitioning and Transport of Mercury due to Sediment Resuspension*, Industrial Technology and Research Institute, Taiwan.

Mamunur Rashid, August 2003, *Optimal Expansion of Sewage Collection Systems*, RBF Consultants, Irvine CA. (Southern Indiana University)

**GRADUATE  
STUDENTS  
(COMPLETED)**

Youngik Choi (co-chair with K. Johnson), May 2005, *Ammonia Nitrogen Removal In Lagoon Systems*, Silla University, Pusan, Korea.

Hua Xu (co-chair with A. Hong), December 2005, *Integrated Chemical and Biological Treatment of Persistent Bioaccumulative and Toxic Compounds*, Post-Doc, Purdue University.

**Master of Science (thesis)**

Matt Myers, December 2005, *Oxidation-Reduction Potential as a Means Of Controlling Effluent Ammonia Concentration In An Extended Aeration Activated Sludge System*, CH2M Hill, Salt Lake City, UT.

Jason Wisner, May 2004, *Vacuum-Induced Semi-Aerobic Biostabilization of Municipal Solid Waste*, Brown and Caldwell, Atlanta, GA.

Jed Hansen, May 2002, *Dynamic Modeling of TSS Release from Cutter Suction Dredges*, Law School, University of Utah.

John Cook, May 2002, *Dynamic Programming for Optimal Selection and Placement of BMPs for Stormwater Management and Quality*.

Tom Borrowman, December 2001, *Dynamic Modeling of Far-field TSS Transport from Bucket Dredging Operations*, Research Civil Engineer, USAE Engineer Research and Development Center, Vicksburg, MS..

Jaeheon Lee, December 2001, *Flocculent Settling Behavior of Dilute Kaolin Suspensions Under Non-quietent Conditions*.

Sandy Rhea, May 2001, *Optimal Wastewater Collection System Expansion*, Environmental Engineer, CH2M Hill, Salt Lake City, UT.

John Richardson, May 2000, *Accelerated Biogasification of Solid Waste and Partitioning of Pb and Cd in pH-controlled 2-phase Anaerobic Fermentation Process*, Environmental Engineer, WESTECH Equipment Corp., Salt Lake City, UT

Sarah McIllroy, December 1998, *Optimal Selection and Placement of BMPs for Stormwater Management and Quality*, Environmental Engineer, EWP Engineering, Salt Lake City, UT

Brad Rasmussen, June 1998, *Calibrating Water Quality Models for Water Distribution Systems*, Co-owner, Aqua Engineering, Bountiful, UT.

Tim Heyrend, August 1996, *Biological Arsenic Removal from Mining Wastes*, Environmental Engineer, Utah Div. of Water Resources, Salt Lake City, UT

Dave Overbey, December 1995, *Use of Barriers to Protect Reservoirs from Excessive Sedimentation* Environmental Engineer, URS Greiner Woodward-Clyde, Omaha, NE

Tim Crockett, December 1993, *Modeling Near-field Sediment Resuspension in Cutterhead Suction Dredging Operations*, Environmental Engineer, HDR Engineering, Omaha, NE

Jennifer Rock (co-chair with Dr. Jeff Robins), August 1993, *Nitrate Removal from a Synthetic Groundwater Using a Constructed Wetland*, Environmental Engineer, Scott Air Force Base, IL

**GRADUATE  
STUDENTS  
(COMPLETED)**

**Master of Engineering (project report)**

J. Gardner Olsen, December 2005, *Hydraulic and Water Quality Model for Finished Water in the Salt Lake City Aqueduct*, Metropolitan Water District for Salt Lake and Sandy.

Julie Cobleigh, December 2005, coursework only.

Terry Warner, December 2005, coursework only, Brown and Caldwell, Salt Lake City, UT.

Amy Thatcher, May 2005, coursework only, US Bureau of Reclamation, Salt Lake City, UT.

Jeff Lachowski, December 2004, *Engineered Vegetation Covers for Waste Rock Management: Analysis of the Bingham Canyon Waste Rock Dumps*, Kennecott Copper.

Michael Baghoomian, December 2004, *Automated Hazardous Waste Management System for USAF*, Northrop Grumman Mission Systems, Salt Lake City, UT.

Travis Higby, August 2004, coursework only.

Randy Rettig, May 2003, *GIS System for Greens Bayou Sediments*

Merrit Neff, December 2001, *Hydrologic Evaluation of Legacy Highway Wetlands*.

Christopher Cutler, December 2001, *Non-monetary Benefits of Upper Colorado River Water Storage*, Environmental Engineer, US Bureau of Reclamation, Salt Lake City, UT

Victoria Voloshina, May 2001, *Effect Of Biopac® on High-Strength Sludge Digestion*, Bowen Collins & Associates, Draper, UT.

Phyllis Roberge, December 2000, *Optimal Operation of Irrigation Gates in the SLC Canal*, Environmental Engineer, Stantek Consulting Engineers, Salt Lake City, UT.

Russell Davis, August 2000, *Comparison of Steady-State and Transient Simulations of Groundwater Capture Zones*, Environmental Engineer, US Army Corps of Engineers, Washington, DC.

Amy Cutler, May 2000, *Rigorous Comparison of the CE-QUAL-W2 and BETTER Water Quality Models for Reservoir Water Quality Assessments*, Environmental Engineer, US Bureau of Reclamation, Salt Lake City, UT.

Pat Limpadke, August 1999, *Comparative Evaluation of Wastewater Screens*, Environmental Engineer, Ministry of the Environment, Thailand.

David Booth, May 1999, *Hydrologic Modeling of Saline Wetlands*, CH2M Hill, Twin Falls, ID.

Susan Choi, December 1997, *Performance Evaluation and Design of Aerobic Digestion Systems*, Divinity student, San Francisco, CA

Loic Monguillon, August 1996, *More Realistic Estimates of Fine Sediment Transport*, Environmental Engineer, Air France, Paris, France.

Orest Lechnowski, August 1994, *Remediation Technologies for Contaminated Sediments*.

Kathy Willcuts, August 1993 (dual degree in Civil Engineering and Public Administration), *Public Policy Impacts on Water Resources Management*, Vice President, The Schemmer Associates, Omaha, NE.

**COURSES  
TAUGHT**

**Undergraduate Courses**

Environmental Engineering I	Environmental Engineering II
Fluid Mechanics/Fluids Laboratory	Hydrology
Senior Design	Water and Wastewater Treatment
Intro to Civil & Environmental Eng.	

**Undergraduate/Graduate Courses**

Aquatic Chemistry	GIS for Civil Engineers
Water Resources Engineering	Solid & Hazardous Waste Eng.
Water Resources Development	Water Distribution Systems

**Graduate Courses**

Hazardous Waste Site Remediation	Water Resources Planning
Numerical Analysis	Surface Water Quality Modeling
Systems Analysis Applications in Environmental and Water Resources Engineering	
Water Quality and Pollution Control	

**UNIVERSITY  
SERVICE**

**University Committees**

- Executive Committee, Environmental Engineering Graduate Program, 1995 – present.
- Development Committee, Environmental Certificate Program, 1998 – present.
- Associate Director, Southwest Center for Environmental Research and Policy, October 1994 – September 1995.
- Admissions Committee, *Environmental Engineering Graduate Program*, University of Utah, 1994 – present.

**College of Engineering Committees**

- College Computer Committee, 1995 - 2000

**Departmental Committees**

- Chair, Department Chair Search Committee, October 2005 – present.
- Chair, Environmental Faculty Search Committee, 2004-05.
- Chair, Water Resources Faculty Search Committee, 2002-03. (Steve Burian)
- Chair, Environmental Faculty Search Committee, 2001-02. (M. Siddiqui)
- Faculty Advisor, University of Utah ASCE Student Chapter, 1999 – 2002.



### UNIVERSITY SERVICE

- Computer Committee, member 1994 – present (Chair 1995 – 2000)
- Scholarship Committee, 1994 – 1996; 1998-1999
- Curriculum Committee, 1995–1997
- Geotechnical Faculty Position Search Committee, 1999-2000 (Steve Bartlett)
- Scholarship Committee, Civil and Environmental Engineering, 1998 – 2002.
- Chair, Water Resources Faculty Search Committee, 1998-99. (Sanja Perica)
- Transportation Faculty Search Committee, 1997-98. (Pedro Romero)
- Geotechnical Faculty Position Search Committee, 1995-96 (Scott Merry)
- Departmental Representative, *Engineering College Council*, 1996 - 1999.
- 
- Advisory Committee, Center for Infrastructure Research, University of Nebraska-Lincoln, July 1993 – August 1994.
- Engineering 2000, Committee on Environmental Engineering, University of Nebraska-Lincoln, 1994.
- Faculty Search Committee, Environmental Engineering, University of Nebraska-Lincoln, 1992.
- Geotechnical Engineering Faculty Search Committee, 1995. (no hire)
- Computer Committee, Civil Engineering, University of Nebraska-Lincoln, 1992 – 1994.
- Admissions Committee, Civil Engineering, University of Nebraska-Lincoln, 1992 – 1994.
- Ad Hoc Space Committee, Civil Engineering, University of Nebraska-Lincoln, 1992 – 1993.

### EXPERT CONSULTING ACTIVITIES

New Jersey Department of Environmental Protection, *Remediation of the Passaic River*, 2007 – present.

Parsons, *Evaluation of Remedial Alternatives for Onondaga Lake*, October 2003 - present.

New Jersey Department of Transportation, *Design and Execution of a Pilot Dredging Study for the Passaic River Superfund Site*, 2004-2007.

Moore and Landry, LLP, *Evaluation of Dredging Impacts to Oyster Leases in Galveston Bay*, 2007 – 2008.

Corr Cronin Michelson Baumgardner & Preece LLP, *Evaluation of Project Data and Operational History, General Metals vs. Bean Dredging*, September 2005 – 2007.

Parsons Brinkerhoff (Orlando), *Beneficial Uses of Phosphorus-laden Lake Sediments*, August 2005 – 2007.

TAMS/EarthTech (for New Jersey Department of Environmental Protection), *Passaic River Remedial Dredging Pilot Study*, October 2004 - 2007.

TAMS/EarthTech (for EPA), *Evaluation of Remedial Alternatives for Hastings on Hudson Superfund Project*, October 2004 - present.

**EXPERT  
CONSULTING  
ACTIVITIES**

US Department of Justice, *Evaluation of Dredging Options for the AK Steel RCRA Site (Expert Report)*, 2005 – 2006.

GB Biosciences & Fulbright and Jaworski (Jeffery S. Wolff, Attorney), *Arbitration Support for Cost Allocation of Remedial Activities in Greens Bayou*, January – October 2004.

ONYX Separations Division & Boies, Schiller, & Flexner, LLP (Bruce Weil, Attorney), *Evaluation of Desanding Operations at Turkey Creek*, September 2003 - January 2004.

*Court-ordered Mediation of Remedial Alternatives (Expert Report)*, GB Biosciences, May - December 2003.

*Development of Dredging Performance Standards for Hudson River Superfund Project*, US Environmental Protection Agency Region 2 (through Malcolm Pirnie, Inc.), January 2003 - May 2004.

*Evaluation of Dredging Options for the Metal Bank Superfund Site (Expert Report)*, US Department of Justice, October 2003 - August 2004.

*Evaluation of Dredging for Remediation of the Upper Hudson River*, US Department of Justice, September 2002 – present.

*Modeling the Fate and Transport of PCB's in the Upper Hudson River for Remedial Alternatives*, US EPA Region 2, November 2000 – November 2001.

Project Control Companies, Inc., *Expert Panel to Identify and Develop Alternatives for Remediation of PCB Contaminated Sediments in the Lower Fox River*, Appleton Papers, 2001 - 2003.

Anchor Environmental, Inc., *Evaluation of Water Quality Impacts from Dredging Contaminated Sediments*, confidential client, 2001.

Roy F. Weston, Inc., *Design and Operation of Mare Island CDFs for Unsuitable Dredged Sediment Disposal*, on-going.

URS-Greiner Woodward Clyde, San Francisco, CA, *Sediment resuspension and contaminant transport estimates for dredging activities associated with the Airport Expansion Project*, 2001.

Management of Environmental Resources, *Peer Review of SLRID Superfund Design Alternatives*, Duluth, MN, 2002 - 2004.

ERM Southwest, Houston, TX, *Remediation of DDT Contaminated Sediments*, Confidential Client, March 2000 – September 2000.

GAI Consultants, Pittsburgh, PA, *Environmental Evaluation of Hudson River Crossings for Natural Gas Pipeline*, October 1999.

Western Wetlands, Inc., Heber City, UT, *Review of Hydraulic and Hydrologic Design of Duchesne River Mitigation Plans*, 1999.

Baseline Hydrology, Park City, UT, *Constructed Wetland and Land Application Potential for Phosphorus Removal from a Summit County Wastewater Treatment Plant Discharge*, 1999.

USAE Waterways Experiment Station, *Final Revisions to Wetland Engineering Handbook*, 1999.

**EXPERT  
CONSULTING  
ACTIVITIES**

Gilson Engineering, Draper, UT, *Conceptual Design Development for Riverton Secondary Water System*, 1998.

Anchor Environmental, Seattle, WA, *CDF Design to Meet Water Quality Standards, Stryker Bay, MN Superfund Site*, May 1998.

Radian Corporation, Houston, TX, *Establishment of a Water Quality Monitoring Program for Contaminated Sediment Removal Operations*, November 1997.

EVS Consultants, Seattle, WA, *Estimates of Sediment Suspension for Dredging Operations in Oakland Inner Harbor*, October 1997. USAE Waterways Experiment Station, *Evaluation of Tiger Pass Study Data*, 1997.

EA Engineering, Science, and Technology, Baltimore, MD, *Evaluation of Patented Technology for Treating New York Harbor Sediments*, February 1997.

Parsons-Brinkerhoff Corporation, Winter Park, FL, *Remediation Strategies for Contaminated Lake Sediments*, unspecified Canadian location, client settled with Environment Canada without remediation, July 1996.

**DEPOSITIONS &  
TESTIMONY**

Oral deposition in the matter of *Fisherman's Harvest vs. The United States and Week's Marine*, in The United States Court Of Federal Claims, May 14, 2008.

Testimony in the matter of *General Metals of Tacoma, Inc. and Arkema, Inc. vs. Bean Environmental, LLC and Bean Dredging, LLC*, United States District Court, Western District of Washington at Tacoma, February 13, 2007.

Oral Deposition in the matter of *General Metals of Tacoma, Inc. and Arkema, Inc. vs. Bean Environmental, LLC and Bean Dredging, LLC*, United States District Court, Western District of Washington at Tacoma, October 23, 2006.

Testimony in the matter of *GB Biosciences and ISK Magnetics vs. Occidental Chemical Corporation*, Private Arbitration Proceeding, September 20, 2004.

Oral Deposition in the matter of *GB Biosciences and ISK Magnetics vs. Occidental Chemical Corporation*, Private Arbitration Proceeding, August 19, 2004.

Oral Deposition in the matter of *ONYX Industrial Services vs. St. John's River Water Management District*, 7<sup>th</sup> Judicial Circuit Court, Putnam County, FL, December 11, 2003.