

**David A.V. Eckhardt**

Research Hydrologist  
U.S. Geological Survey  
30 Brown Road  
Ithaca, New York  
607-266-0217, ext, 3018  
[daeckhar@usgs.gov](mailto:daeckhar@usgs.gov)  
[dae5@cornell.edu](mailto:dae5@cornell.edu)

**EDUCATION:**

Cornell University, Ithaca, New York

Ph.D. (1996) Major: Soil Science; Minors: Statistics, Agricultural & Biological Engineering

West Virginia University, Morgantown, West Virginia

M.S. (1981) Major: Forest Hydrology

Lehigh University, Bethlehem, Pennsylvania

B.S. (1974) Major: Geological Sciences

**PROFESSIONAL POSITIONS:**

1974 - 1982: U.S. Geological Survey, Harrisburg, PA

1982 - 1988: U.S. Geological Survey, Syosset (Long Island), NY

1988 - 2011: U.S. Geological Survey, Ithaca, NY

**PROFESSIONAL EXPERIENCE:**

**Cayuga County Groundwater Contamination Superfund Site** (2001-2011) *Project Leader*

The USGS has provided technical assistance since 2001 to the U.S. Environmental Protection Agency in an investigation of the presence of chlorinated solvents (trichloroethylene and degradates) in groundwater in the Middle-to-Lower Devonian and Upper Silurian carbonate bedrock in Cayuga County, NY. The objective is to characterize the regional hydrogeology as part of an USEPA appraisal of the plume distribution and potential pathways of contaminant movement in the karst bedrock, with emphasis on analysis of borehole geophysical logs.

**Groundwater Quality in National Parks within the Marcellus/Utica Shale Gas Plays (2011)**

*Project Leader*

This characterization of water-supply sources for selected National Parks in the Northeast will provide a baseline of information for chemical, radiochemical, and gaseous constituents that are likely to be affected if contamination occurs from drilling, hydraulic fracturing, and gas development.

**New York State 305b Groundwater-Quality Assessment** (2004-2009) *Project Co-Leader*

The objective is to describe the quality of groundwater that is used for drinking water in New York, cooperatively funded through New York State and EPA as part of the Federal Clean Water Act.

**Models of *E. coli* occurrence at Great Lakes Beaches in New York (2010-2011) *Project Leader***

USGS is collaborating with the Erie County Health Department, Monroe County Health Department, and New York State Office of Parks, Recreation, and Historic Preservation to collect data for predictive model development at five bathing beaches. The models will identify physical and biological processes that influence pathogen occurrence, relate pathogen occurrence to indicator bacteria at each beach, and develop data sets for predictive modeling.

**Occurrence and Fate of Pesticides in Natural Water (1997-2004) *Project Co-Leader***

The objective was to evaluate pesticide occurrence and fate in surface water and groundwater in New York State through a cooperative agreement with New York State. Research objectives included: (1) delineation of source areas for pesticides and (2) evaluation of factors that affect the fate and transport of pesticides and metabolites in various hydrologic environments, including surface runoff, baseflow in streams, tile drains, groundwater, and lakes.

**Constructed Wetlands for Treatment of Landfill Leachate (1996-98) *Project Leader***

This research addressed questions in treatment processes and artificial wetland design that led to improvements in the capacity of wetlands to treat leachate. The study evaluated mass balances and the geochemical and biological fate of constituents within the wetlands. The aqueous concentrations and mineralogic analysis of the gravel matrix and solid-phase residues were used in a geochemical-speciation model of the efficiency of treatment processes.

**Flow and Transport in an Unsaturated Silt-Loam Soil (1990-97) *Project Leader***

The objective of this field and modeling study was to statistically quantify the potential for atrazine transport to groundwater through use of a deterministic solute-transport model that utilized information on the spatial variability of physical and chemical characteristics of an agricultural soil. A major part of this work was to statistically evaluate the parameter estimation process for determination of spatial variability in the soil hydraulic properties that control unsaturated flow and pesticide transport in soils.

**USGS Graduate School Training Program, Cornell University (1988-89)**

**Regional Water Quality Appraisal, Long Island (1984-88) *Project Leader***

This work was a regional study of synthetic organic and inorganic constituents in groundwater and their relation to land use, Long Island, NY, funded through the USGS Toxics Program.

**TCE in Nassau County Groundwater, NY (1982-85) *Project Leader***

This evaluation of a TCE plume in the Long Island aquifer system, funded by Nassau County, involved flow-system analysis, network design, data collection and analysis, and an evaluation of TCE sampling methods.

**Hydrogeology of the Danville-Berwick Area, PA (1981-82)**

This regional hydrogeologic and water-quality study of a bedrock aquifer system in central Pennsylvania was funded by the Pennsylvania Geologic Survey.

### **Pequea Creek Water-Quality Appraisal, PA (1976-78)**

This study was one of the first efforts to determine loads of nutrients, organic carbon, sediment, and triazine herbicides from agricultural Piedmont regions to the upper Chesapeake Bay, funded by the Susquehanna River Basin Commission and the USEPA.

### **PROFESSIONAL SOCIETIES**

American Geophysical Union, Hydrology Section  
National Ground Water Association

### **SELECTED COMMITTEES AND PANELS**

**2007 – 2008:** Chair, peer review panel for scientific evaluation of a hydrodynamic surface-water model of nonpoint-source loads of nutrient and sediment to Onondaga Lake in central New York State, funded through a grant by the U.S. Environmental Protection Agency.

**2005:** Member, peer review team, Pesticides and Integrated Pest Management, Soil and Water Conservation Society book chapter in *Environmental Benefits of Conservation Cropland*.

**2001:** Member, Feasibility Committee for the journal *Vadose Zone Hydrology* for the Soil Science Society of America.

**2000:** Peer-review member for a multi-year research project on pest management factors on organic farms, Cornell University (Invited by USDA-SARE Program).

**1998 – 2003:** Associate Editor, *Journal of Environmental Quality* (JEQ); Special Editor of the January 2002 issue on the Lake Erie Agricultural Systems for Environmental Quality Project.

**1998 – 1999:** Member, New York State Department of Health Working Group for Contaminant Inventory and Significance, chartered by the State Source Water Assessment and Protection Program through the Safe Drinking Water Act.

**1999 – 2002:** Member, Northeast Region Administrative Council (AC) for the Sustainable Agriculture Research and Education Program of the USDA.

**1995 – 1996:** Member of the Model Advisory Panel, FIFRA Environmental Model Validation Task Force, Washington DC.

### **ACADEMIC SERVICE**

Adjunct appointment, Cornell University, Department of Earth and Atmospheric Sciences, Ithaca, NY (1997-2011).

Honors Thesis Committee member, Department of Geosciences, Hobart and William Smith Colleges (2000 and 2010).

Invited class lectures and seminars: Cornell University, Hobart and William Smith Colleges, SUNY College of Environmental Science and Forestry (Syracuse), Wells College (1990-2010).

Graduate Instructor, Department of Geology, Adelphi University, Mineola, NY (1987-88).

## SPECIAL ASSIGNMENTS

Detail to the National Canyon sediment study as part of USGS involvement in the Grand Canyon Environmental Studies research; January and June 1992.

French language fluency

## PUBLISHED REPORTS:

1. Hayhurst, B.A., Coon, W.F., and **Eckhardt**, D.A., 2010, Water resources of Monroe County, New York, water years 2003–08: Streamflow, constituent loads, and trends in water quality: U.S. Geological Survey Scientific Investigations Report 2010-5216, 34 p.  
<http://pubs.usgs.gov/sir/2010/5216>
2. **Eckhardt**, D.A., and Anderson, J.A., 2010, Geophysical logs of selected wells at the Diaz Chemical Superfund Site in the Village of Holley, New York, 2009: U.S. Geological Survey Data Series-500, 16 p.
3. **Eckhardt**, D.A., Reddy, J.E., and Shaw, S.B., 2009, Ground-water quality in central New York, 2006: U.S. Geological Survey Open-File Report 2009-1257, 40 p.  
<http://pubs.usgs.gov/of/2009/1257>
4. Coon, W.F., Hayhurst, B.A., Kappel, W.M., **Eckhardt**, D.A., and Szabo, C.O., 2009, Water-quality characterization of surface water in the Onondaga Lake basin, Onondaga County, New York, 2005–08: U.S. Geological Survey Scientific Investigations Report 2009–5246, 68 p.  
<http://pubs.usgs.gov/sir/2009/5246>
5. **Eckhardt**, D.A., Reddy, J.E., and Tamulonis, K.L., 2008, Ground-water quality in western New York, 2006: U.S. Geological Survey Open-File Report 2008-1140, 36 p.  
<http://pubs.usgs.gov/of/2008/1140>
6. Miller, T.S., Bugliosi, E.F., Hetcher-Aguila, K.K., and **Eckhardt**, D.A., 2007, Hydrogeology of two areas of the Tug Hill glacial-drift aquifer, Oswego County, New York: U.S. Geological Survey Scientific Investigations Report 2007-5169, 42 p.  
<http://pubs.usgs.gov/sir/2007/5169>
7. **Eckhardt**, D.A., Reddy, J.E., and Tamulonis, K.L., 2007, Ground-water quality in the Genesee River Basin, New York, 2005-06: U.S. Geological Survey Open-File Report 2007-1093, 26 p.  
<http://pubs.er.usgs.gov/usgspubs/ofr/ofr20071093>
8. **Eckhardt**, D.A. and Anderson, J.A., 2007, Geophysical logs of selected test wells at the Diaz Chemical Superfund site in Holley, New York: U.S. Geological Survey Open-File Report 2007-1081, 15 p.
9. Hetcher-Aguila, K.K. and **Eckhardt**, D.A., 2006, Ground-water quality in the upper Susquehanna River Basin, New York, 2004-05: U.S. Geological Survey Open-File Report 2006-1161, 20 p. <http://ny.water.usgs.gov/pubs/of/of061161>
10. Anderson, J.A., Williams, J.H., **Eckhardt**, D.A., and Miller, T.S., 2004, Geophysical, stratigraphic, and flow-zone logs of selected test, monitor, and water-supply wells in Cayuga

County, NY: U.S. Geological Survey Open-File Report 03-468, 10 p.  
<http://ny.water.usgs.gov/pubs/of/of03468>

11. **Eckhardt**, D.A., 2003, Land use and water quality: *in* Dasch, E.J. (ed.), *Water: Science and Issues*: New York, NY, Macmillan Reference USA, v. 3, p. 1-6.
12. Phillips, P.J., **Eckhardt**, D.A., Freehafer, D.A., Wall, G.R., and Ingleston, H.H., 2002, Regional patterns of pesticide concentrations in surface waters of New York in 1997: *J. Amer. Water Res. Assoc.*, v. 38, p. 731-745.
13. **Eckhardt**, D.A., Hetcher, K.K., Phillips, P.J., and Miller, T.S., 2001, Pesticides and their metabolites in community water-supply wells of New York, August 1999: U.S. Geological Survey Water Resources Investigations Report 00-4128, 12 p.  
<http://ny.water.usgs.gov/pubs/wri/wri004128>
14. Phillips, P.J., **Eckhardt**, D.A., and Rosenmann, Larry, 2000, Pesticides and their metabolites in three small public-supply reservoir systems, western New York, 1998-99: U.S. Geological Survey Water Resources Investigations Report 99-4278, 20 p.  
<http://ny.water.usgs.gov/pubs/wri/wri994278>
15. Phillips, P.J., **Eckhardt**, D.A., Smith, Melissa, and Rosenmann, Larry, 2000, Pesticides and their metabolites in selected surface-water public supplies in New York State, 1999: U.S. Geological Survey Water Resources Investigations Report 00-4119, 16 p.  
<http://ny.water.usgs.gov/pubs/wri/wri004119>
16. Eckhardt, D.A., and Burke, S.M., 2000, Pesticide residues in Hemlock and Canadice Lakes and their tributaries in western New York, 1997-98: U.S. Geological Survey Water-Resources Investigations Report 99-4271, 9 p. <http://ny.water.usgs.gov/pubs/wri/wri994271>
17. Rosenmann, L.A., **Eckhardt**, D.A., Phillips, P.J., and Trent, Martin, 2000, Developing a comprehensive pesticide monitoring program through interagency cooperation; Monitoring for the Millennium National Water Quality Monitoring Council, Conference Proceedings, April 25-27, 2000, Austin, TX, p. 397-408.
18. Wagenet, L.P., **Eckhardt**, D.A., Hairston, H.G., Karig, D.E., and Yager, R. (editors), 1999, Symposium on Environmental Research in Cayuga Lake Watershed: Natural Resource, Agriculture, and Engineering Service Report 121, Cornell University, Ithaca, NY, 210 p.  
<http://www.nraes.org/publications/nraes121.html>
19. **Eckhardt**, D.A., Kappel, W.M., Coon, W.F., and Phillips, P.J., 1999, Herbicides and their metabolites in Cayuga Lake and its tributaries, New York: Natural Resource, Agriculture, and Engineering Service Report 121, Cornell University, Ithaca, NY, p. 133-144.
20. Bauters, T.W.J., and **Eckhardt**, D.A., 1999, Nitrate transport in the Fall Creek watershed near Ithaca, New York: Natural Resource, Agriculture, and Engineering Service Report 121, Cornell University, Ithaca, NY, p. 41-52.
21. **Eckhardt**, D.A., Kappel, W.M., Coon, W.F., and Phillips, P.J., 1999, Pesticides and their metabolites in Cayuga Lake and its tributaries, New York: *in* Morganwalp, D.W., and Buxton, H.T., (eds.), U.S. Geological Survey Toxic Substances Hydrology Program — Proceedings of

- the Technical Meeting, Charleston, SC, USGS Water Resources Investigations Report 99-40018B, p. 395-403.
22. Phillips, P.J., **Eckhardt**, D.A., Thurman, E.M., and Terracciano, S.A., 1999, Ratios of metolachlor to its metabolites in ground water, tile-drain discharge, and surface water in selected areas of New York State: in Morganwalp, D.W., and Buxton, H.T., (eds.), U.S. Geological Survey Toxic Substances Hydrology Program — Proceedings of the Technical Meeting, Charleston, SC, March 1999, U.S. Geological Survey Water Resources Investigations Report 99-40018B, p. 383-393.
  23. **Eckhardt**, D.A., Surface, J.M., and Peverly, J.H., 1999, A constructed wetland system for treatment of landfill leachate, Monroe County, New York: *in* Mulamoottil, G., McBean, E.A., and Rovers, F., (eds.), *Constructed wetlands for the treatment of landfill leachates*: Lewis Publishers, Boca Roton, Fla., p. 205-222.
  24. **Eckhardt**, D.A., and Wagenet, R.J., 1999, Calibration of unsaturated hydraulic conductivity functions for gravity drainage experiments: in van Genuchten, M.Th., Leij, F.J., and Wu, L., (eds.), *Characterization and measurement of the hydraulic properties of unsaturated media*, University of California at Riverside, p. 1047-1060.
  25. Phillips, P.J., Wall, G.R., Thurman, E.M., **Eckhardt**, D.A., and Vanhoesen, J., 1999, Metolachlor and its metabolites in tile drain and stream runoff in the Canajoharie Creek watershed: *Environmental Science and Technology*, v. 33, n. 20, p. 3531-3537.  
<http://ks.water.usgs.gov/Kansas/pubs/abstracts/est.v33.1999.html>
  26. Phillips, P.J., **Eckhardt**, D.A., Terracciano, S.A., and Rosenmann, L., 1999, Pesticides and their metabolites in wells of Suffolk County, New York — 1998: U.S. Geological Survey Water Resources Investigations Report 99-4095, 12 p.  
<http://ny.water.usgs.gov/pubs/wri/wri994095>
  27. **Eckhardt**, D.A., 1998, Calibrating unsaturated hydraulic conductivity functions for gravity-drainage experiments: *Proceedings of the 16th World Congress on Soil Science*, International Soil Science Society, Montpellier, France, August 1998, v. 1, p. 26.
  28. Phillips, P.J., Wall, G.R., **Eckhardt**, D.A., Freehafer, D.A., and Rosenmann, L., 1998, Pesticide concentrations in surface waters of New York State in relation to land use — 1997: U.S. Geological Survey Water Resources Investigations Report 98-4104, 9 p.  
<http://ny.water.usgs.gov/pubs/wri/wri984104>
  29. Coon, W.F., Yager, R.M., Surface, J.M., Randall, A.D., and **Eckhardt**, D.A., 1997 Hydrology and water quality of the Clinton Street – Ballpark aquifer near Johnson City, New York: U.S. Geological Survey Open-File Report 97-102, 57 p., 5 pls.  
<http://ny.water.usgs.gov/pubs/of/of97102>
  30. **Eckhardt**, D.A., and Wagenet, 1996, Estimation of the potential for atrazine transport in a silt-loam soil: *in* Meyer, M.T., and Thurman, E.M., (eds.), *Herbicide Metabolites in Surface Water and Ground Water*, ACS Book Series, No. 630, American Chemical Society, Washington DC, p. 101-116.
  31. **Eckhardt**, David A., 1996, Unsaturated flow of water and transport of herbicides in a silt-loam soil: Ph.D. Dissertation, Cornell University, Ithaca, NY, 187 p.

32. **Eckhardt**, D.A., and Stackelberg, P.E., 1995, Relation of ground-water quality to land use on Long Island, New York: *Ground Water*, v. 33, p. 1019-1033.
33. **Eckhardt**, D.A., Wagenet, R.J., Thurman, E.M., and Barnes, P.L., 1996, Fate of alachlor, atrazine, and bromide in a corn plot near Topeka, Kansas: in Morganwalp, D.W., and Aronson, D.A., eds., U.S. Geological Survey Toxic Substances Hydrology Program--Proceedings of the Technical Meeting, Colorado Springs, Co., September 1993: U.S. Geological Survey Water Resources Investigations Report 94-4014, p. 535-541.
34. Stackelberg, P.E., and **Eckhardt**, D.A., 1996, Modeling statistical relations among shallow ground-water quality, human activities, land use, and thickness of the unsaturated zone on Long Island, New York: *in* Morganwalp, D.W., and Aronson, D.A., eds., U.S. Geological Survey Toxic Substances Hydrology Program--Proceedings of the Technical Meeting, Colorado Springs, Co., Sept. 1993: USGS Water Resources Investigations Report 94-4014, p. 993-1000.
35. **Eckhardt**, D.A., and Barnes, P.L., 1991, Spatial variability in hydraulic conductivity of a silt-loam soil near Topeka, Kansas: *in* Mallard, G.E. and Aronson, D.A., eds., Proceedings of the U.S. Geological Survey Toxic Substances Hydrology Program, Monterey, Ca., Water Resources Investigations Report 91-4034, p. 210-213.
36. **Eckhardt**, D.A., and Pearsall, K.A., 1989, Chlorinated organic compounds in ground water at Roosevelt Field, Nassau County, Long Island, New York: U.S. Geological Survey Water-Resources Investigations Report 86-4333, 62 p.  
<http://pubs.er.usgs.gov/pubs/wri/wri864333>
37. **Eckhardt**, D.A., Siwec, S.F., and Cauller, S.J., 1989, Regional appraisal of ground-water quality in five different land-use areas, Long Island, NY: *in* Mallard, G.E., and Ragone, S.E., eds., Proceedings of the U.S. Geological Survey Toxic Substances Hydrology Program, Phoenix, AZ, Water Resources Investigations Report 88-4220, p. 397-403.
38. **Eckhardt**, D.A., Flipse, W.J., Jr., and Oaksford, E.T., 1988, Relation between land use and ground-water quality in the upper glacial aquifer in Nassau and Suffolk Counties, Long Island, New York: U.S. Geological Survey Water-Resources Investigations Report 86-4142, 35 p.
39. **Eckhardt**, D.A., and Helsel, D.R., 1988, Statistical methods for a regional ground-water quality appraisal in different land-use areas, Long Island, New York: American Chemical Society Proceedings, v. 28, no. 2, Los Angeles, Ca., September 1988, p. 5-7.
40. **Eckhardt**, D.A., and E.T. Oaksford, 1988, Relation of land use to ground-water quality in the upper glacial aquifer, Long Island, New York: *in* National Water Summary 1986 -- Hydrologic Events and Ground-Water Quality: U.S. Geological Survey Professional Paper 2325, p. 115-121. <http://pubs.er.usgs.gov/pubs/wsp/wsp2325>
41. Pearsall, K.A., and **Eckhardt**, D.A., 1987, Effects of selected sampling equipment and procedures on the concentrations of trichloroethylene and related compounds in ground water samples: *Ground Water Monitoring Review*, v. 7, no. 2, p. 64-73.
42. Williams, J.H., and **Eckhardt**, D.A., 1987, Groundwater resources of the Berwick-Bloomsburg-Danville area, east-central Pennsylvania: Pennsylvania Geological Survey Water Resource Report, no. 61, 76 p.

43. **Eckhardt**, D.A., and Wexler, E.J., 1986, Ground-water movement in the upper glacial aquifer in the Manorville area, Town of Brookhaven, Long Island, New York, in November 1983: U.S. Geological Survey Water-Resources Investigations Report 85-4035, 12 p.
44. Williams, J.H., and **Eckhardt**, D.A., 1984, Appraisal of aquifers -- New York: *in* U.S. Geological Survey, 1984, Geological Survey Research in 1981: U.S. Geological Survey Professional Paper 1375, p. 88.
45. Ward, J.R. and D.A. **Eckhardt**, 1979, Nonpoint-source discharges in Pequea Creek basin, Pennsylvania: U.S. Geological Survey Water-Resources Investigation Report 79-88, 110 p.
46. **Eckhardt**, D.A., 1976, Sediment discharge from an area of highway construction, Appleman's Run basin, Columbia County, Pennsylvania: U.S. Geological Survey Water-Resources Investigations Report 76-111, 25 p.