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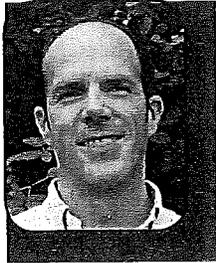
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Horsley Witten Group  
Sustainable Environmental Solutions



Neal M. Price

Senior Project Manager – Senior Hydrogeologist

TOWN CLERK-CARLISLE  
CHARLENE M. HINTON



#### Areas of Expertise

- Hydrogeology/ Water Supply Development
- Watershed Planning & Assessment
- Integrated Water Management
- Groundwater Quality
- Wastewater Management
- Stormwater Management
- Wetland and Natural Resource Area Assessments
- Coastal Resources
- Environmental Permitting & Compliance

#### Professional Affiliations

- American Geophysical Union
- National Groundwater Association
- American Water Works Association
- New England Water Works Association

#### Academic Background

Masters of Science,  
Geology, University of  
Massachusetts, Amherst

Bachelor of Arts, Archeology,  
Oberlin College

Archeological Field School,  
Sheffield University (UK)

Neal Price has 20 years of professional experience in the fields of hydrology and hydrogeology. Neal is a Senior Hydrologist and Senior Project Manager at Horsley Witten Group, Inc. (HW) and is responsible for developing client relations, supervising staff activities, and managing various projects within the firm. Neal has conducted much of the fieldwork, data analysis and interpretation, report preparation, and client contact for HW's varied hydrologic investigations. The nature and extent of the work he has conducted includes nutrient management, wastewater disposal feasibility studies, groundwater and surface water modeling, watershed and drinking water protection studies, water supply investigations, and wetland restoration and estuarine hydrology studies, as well as development review and permitting.

#### REPRESENTATIVE PROJECTS

**Groundwater Mounding Evaluations:** Completed numerous small-scale groundwater models to evaluate the potential for undesirable impacts from groundwater mounding beneath proposed wastewater and stormwater infiltration systems. Example locations include Westwood, Carlisle, Dover, Winchester, and Plymouth MA.

**Groundwater Discharge Permits for Kingman Marine, Canal Bluffs, Forestdale Village, and South Sandwich Village:** Senior Hydrogeologist for numerous, successfully-obtained, groundwater discharge permits on Cape Cod. Many were located in TMDL watersheds requiring "no net increase" in nitrogen and, therefore required innovative planning and designs to achieve those water quality protection goals.

#### Wastewater Discharge Feasibility Study, The Pinehills, Plymouth, MA:

Contributed to the feasibility analysis and permitting for wastewater treatment and disposal for a major mixed use development that was the first Groundwater Discharge Permit in MA to allow both centralized sewer service and individual septic systems as part of the same permit. The work involved subsurface investigations, pumping tests, and loading tests to determine the suitability of several sites to accept treated wastewater discharge; numerical modeling and groundwater mounding analyses to determine hydrologic impacts in the vicinity of the discharge sites; and nutrient loading analyses to determine water quality impacts to nearby surface waters. The development now includes a state of the art wastewater treatment plant and two separate subsurface discharge locations.

#### Wastewater Facilities Plan for Hale Reservation, Westwood, MA:

Hale Reservation is an approximately 1,300 acre summer camp facility serving approximately 2,000 children per day from across the Metropolitan Boston Area. The facility has historically been served by informal decentralized wastewater systems. In response to an Administrative Consent Order from DEP, a facilities plan was successfully negotiated with DEP to bring the reservation into compliance under the Nutrient Loading Policy of the Ground Water Discharge Permit (GWDP) process. The plan allows the reservation to maintain a decentralized approach to wastewater while gradually updating individual facilities over an extended time frame. A GWDP was successfully obtained.

Newburyport

Sandwich

Providence

Boston

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**Wastewater Discharge Feasibility Study, Oak Bluffs, MA:** Assisted a coastal community to develop a municipal sewer system for their busy downtown area. The project included subsurface investigations, pumping tests, and loading tests to determine the suitability of several sites to accept treated wastewater discharge; numerical modeling and groundwater mounding analyses to determine hydrologic impacts in the vicinity of the discharge sites; and nutrient loading analyses to determine water quality impacts to nearby surface waters.

**Wastewater Discharge Feasibility Study, North Kingstown, Rhode Island:** Hydrogeologist for a wastewater disposal feasibility study for a proposed Transit Oriented Development (TOD) in the Wickford Junction Village area of North Kingstown. The Project was a desktop assessment using existing information to conceptually plan wastewater needs for several different TOD scenarios based upon hydrogeologic, water quality, regulatory, and public perception constraints. Groundwater

**Groundwater Modeling Review of Wastewater Disposal Plan, Falmouth, MA:** Project Manager and modeler for a review of groundwater modeling completed by the Town of Falmouth to assess potential impacts to West Falmouth Harbor and other estuarine resources from proposed wastewater disposal alternatives. The work was conducted for the Buzzards Bay Coalition and utilized the USGS MODFLOW groundwater modeling code.

**Groundwater Modeling Review of Wastewater Disposal Plan, Plymouth, MA:** Project Manager and modeler for a review of groundwater modeling completed by the developer of the proposed River Run development in South Plymouth. The USGS MODFLOW groundwater modeling code was used by the developer to assess how wastewater effluent from the proposed development would distribute through different subwatersheds, some of which with Total Maximum Daily Load Limits for wastewater-related pollutants. The project included review of the Applicant's modeling work, the completion of new modeling work, review and assessment of filed monitoring data, and expert witness testimony in a Ground Water Discharge Permit appeal case before the Massachusetts DEP.

**Groundwater Modeling Review of Wastewater Disposal Plan, Bedford, NY:** Project Manager and modeler for a review of groundwater modeling completed by the proposed developer of a large subdivision in Bedford, New York to assess potential impacts from proposed wastewater disposal alternatives. The work was conducted for the Town and utilized the USGS MODFLOW groundwater modeling code.

**Modeling Support for Remedial Actions, San Francisco, CA:** Project Manager conducting groundwater modeling assessment of remedial actions alternatives for the Hunter's Point Naval Shipyard. Utilized the USGS MODFLOW groundwater modeling code to evaluate a landfill cap, slurry walls, French drains, pump and treat systems, and constructed wetlands as remedial alternatives for a hazardous material landfill at a naval base in San Francisco.

**Water Supply and Wastewater Evaluation for the Pinehills Community, Plymouth, MA:** Created both regional-scale and local-scale groundwater models to evaluate the potential groundwater drawdown impacts from proposed new drinking water wells on nearby sensitive water resources, including coastal plain ponds and their associated, globally significant habitat.

**Forensic Modeling of Prior Hydrologic Conditions, Carver, MA:** In support of a major court case for the U.S. EPA and the Department of Justice, created a small-scale "inset" model from a regional-scale USGS groundwater model to conduct a forensic investigation of potential hydrologic conditions that existed antecedent to the current conditions dominated by commercial cranberry agriculture.

**Expert Witness, Norwell, MA:** Retained as an expert in hydrogeology with regard to wastewater disposal suitability for a large proposed residential development. Testimony provided before the Housing Appeals Commission in Boston, MA.



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**Expert Witness, Plymouth, MA:** Retained as an expert in hydrogeology with regard to wastewater disposal suitability for a large proposed residential development. Testimony provided before the Massachusetts Superior Court in Plymouth, MA. Expert Witness commentary also provided to DEP during the Groundwater Discharge Permit process.

**Expert Witness, North Kingstown, Rhode Island:** Provided sworn testimony before the Town Zoning Board of Appeals on behalf of the Town with regards to the water quality impacts from a large proposed residential development.

**Expert Witness, Manchester, MA:** Provided testimony before the Town Zoning Board of Appeals with regards to the water quality and water quantity impacts from a large proposed residential development.

### **PROFESSIONAL EXPERIENCE**

Horsley Witten Group, Inc., Senior Hydrogeologist/Senior Project Manager, 1997 to present

MetroWest Water Supply Tunnel Project, 1997

Water Resources Research Center, Univ. of Massachusetts, Research Scientist, 1995 to 1997

Fugro East Inc., Geologist, 1995

21E, Inc., Environmental Scientist, 1993

### **PUBLICATIONS & PRESENTATIONS**

Price, N. January, 2014. "Stormwater Sampling Downstream of a CSO Abatement Facility - Initial Findings, Dorchester, Massachusetts." New England Water Environment Association (NEWEA) annual conference, Boston, MA.

Price, N. October, 2013. "Optimal Pumping and Recharge Strategies for Streamflow Augmentation in Franklin, MA" Water Resources Symposium, New England Water Works Association (NEWWA), Westford, MA.

Price, N. April 1, 2010. "Using Groundwater Modeling and Geochemical Principles to Design a Replacement Drinking Water Well with Reduced Susceptibility to Dissolved Iron and Manganese Concerns." Spring Joint Regional Conference, New England Water Works Association (NEWWA), Worcester, MA.

Price, N. 2009. A GIS-Based Water Budget Tool for Subwatersheds of the Taunton River Watershed. Massachusetts Water Resources Conference.

Price, N. 2007. An Environmentally Sustainable Approach to Water Supply Resource Protection and Development, a Southeastern Massachusetts Case Study. Massachusetts Water Resources Conference.

Watras, C.J.; Morrison, K.A.; Vent, A.; Price, N.; Negnell, O.; Eckley, C.; Hintelman, H.; Hubacher, T. 2005. Sources of Methylmercury to Wetland-Dominated Lake in Northern Wisconsin. Environmental Science Technology, Volume 39, Pages 4747-4758.

Price, N. 2000. Seasonal and climatic influences on the hydrology of the Gull-Higgins kettle pond complex, Wellfleet, MA. Cape Cod Environment.

Godfrey, P. K. Galluzzo, N. Price and J. Portnoy. 1999. Water Resource Management Plan for the Cape Cod National Seashore, for the National Park Service.

Price, N. 1999. Seasonal and Climatic Influences on the Hydrology of the Gull-Higgins Kettle Pond Complex in Wellfleet, MA. Poster presentation at the American Geophysical Union Conference, Spring 1999.