

Nicholas Santella, Ph.D., P.G.

Principal Geochemist



3157 Limestone Rd, Cochranville, PA 19330

Office: 610.593.5500 | Direct: 610.806.5288 | Email: nsantella@bstiweb.com

Areas of Specialization

- Environmental Site Assessments
- Tracer Hydrology
- Geographic Information Systems
- Environmental Chemistry
- Probabilistic Risk Analysis

Qualifications

- Fifteen years of experience in the environmental science and engineering fields.
- Over eight years of experience in environmental investigations and site assessment.
- Authored and co-authored over a dozen peer reviewed journal articles regarding environmental chemistry/transport and risk management.

Overview of Project Experience

- Developed, calibrated and validated a large scale groundwater flow and contaminant transport model for a tidally influenced site in support of project closure.
- Performed fate and transport modeling to develop NJ SRP alternate remediation standards for the soil to groundwater pathway at multiple sites.
- Lead an effort to identify sources of PCB within the service area of a county sanitary sewer network. This work was conducted as part of a Pollution Minimization Plan (PMP) associated with a NPDES permit and produced a geodatabase to support further source trackback efforts.
- Performed soil gas sampling and vapor intrusion risk assessments using J&E model and other methodologies at multiple sites.
- Provided project oversight, data management and reporting for groundwater assessment of a large and complex hexavalent chromium remediation site.

Education

Ph.D., Geological Science
(Geochemistry)
Columbia University, 2005

B.S., Chemistry
Rutgers University, 1999

Registration/Certification

Delaware Professional
Geologist (PG)

OSHA certified Hazardous
Waste Operations
and Emergency Response
(HAZWOPER per 29 CFR 1910.120)

Affiliations

American Geophysical Union

National Ground Water
Association



Overview of Project Experience (continued)

- Managed regulatory compliance and field operations for a fractured rock remediation site including monthly monitoring of water quality and hydraulic performance, quarterly groundwater quality sampling, and the preparation of reports to USEPA, NJDEP and the client.
- Developed and maintained an extensive database of analytical data and developed and implemented statistical methods for data evaluation and display in accord with risk based environmental standards for a large brownfield site.
- Supervised the execution of a project assessing risk, prevention and remediation of hazardous material releases associated with natural disasters at storage tanks and other facilities.
- Developed and carried out validation of a critical infrastructure protection decision support system for Los Alamos National Lab and the Department of Homeland Security Science and Technology.

Publications

Santella N., *Growing Vulnerability: Facing Natural Hazard-Related Environmental Liability*, NJ Municipalities, November 2015

Santella N., Ho D.T., Schlosser P., Gottlieb E., Munger W.J., Elkins W.J., Dutton G.S. *Atmospheric variability and emissions of halogenated trace gases near New York City*, *Atmospheric Environment*, 47, 533-540, 2012

Sengul H., Santella N., Steinberg L.J., Cruz A.M. *Analysis of Hazardous Material Releases Due to Natural Hazards in the U.S.*, *Disasters*, 36 (4), 723-743, 2012

Santella N., Steinberg L.J., Aguirra G. A. *Empirical Estimation of the Conditional Probability of Natech Events Within the United States*, *Risk Analysis*, 31 (6), 951-968, 2011

Santella N., Steinberg L.J. *Accidental Releases of Hazardous Materials and Relevance to Terrorist Threats at Industrial Facilities*, *Journal of Homeland Security and Emergency Management*, 8 (1), 53, 2011

Steinberg L.J., Santella N., Zoli C. *Baton Rouge Post-Katrina: The Role of Critical Infrastructure Modeling in Promoting Resilience*, *Homeland Security Affairs*, 7, 7, 2011

Sengul H., Santella N., Steinberg L.J., Chermak C. *Accidental Hazardous Material Releases With Human Impacts in the United States: Exploration of Geographical Distribution and Temporal Trends*, *J. Occupational and Environmental Medicine*, 52 (9), 920-925, 2010

Santella N., Sengul. H., Steinberg L.J. *Petroleum and Hazardous Material Releases from Industrial Facilities Associated with Hurricane Katrina*, *Risk Analysis*, 30(4), 635-649, 2010

Santella N., Steinberg L.J., Parks K. *Decision-Making for Extreme Events: Modeling Critical Infrastructure Interdependencies to Aid Mitigation and Response Planning*, *Review of Policy Research* 26 (4), 409-422, 2009

Santella N., Ho D.T., Schlosser P., Stute M. *Widespread elevated atmospheric SF6 mixing ratios in the Northeastern United States: Implications for groundwater dating*, *J. of Hydrology*, 349 (1-2), 139-146, 2008



Publications (continued)

Santella N., Schlosser P., Smethie W.M., Ho D.T, and Stute M. *Seasonal variability and long term trends of chlorofluorocarbon mixing ratios in the unsaturated zone*, Environ. Sci. Technol., 40 (14), 4414 -4420, 2006

Caplow, T., P. Schlosser, D.T. Ho, N. Santella, *Transport dynamics in a sheltered estuary and connecting tidal straits: SF₆ tracer study in New York Harbor*, Environ. Sci. Technol., 37, 5116-5126, 2003

Santella N., Ho D.T., Schlosser P., et al., *Distribution of atmospheric SF₆ near a large urban area as recorded in the vadose zone*, Environ. Sci. Technol. 37 (6): 1069-1074, 2003