PROFESSIONAL PROFILE

CONTACT INFORMATION
Main: (781) 569-4000
Direct: (781) 569-4049
Email: mwiest@rouxinc.com
Website: www.rouxinc.com

200 Summit Drive, Suite 500
Burlington, MA 01803

EDUCATION
BS, Geology, Duke University, 1983

PROFESSIONAL LICENSES
Professional Geologist, New Hampshire
Connecticut Licensed Environmental Professional #409

Mitchell A. Wiest, PG, LEP

Principal Hydrogeologist

EXPERIENCE SUMMARY
Over 30 years of experience: Senior Hydrogeologist with Roux (2000-present); Senior Consultant, IT Corporation (1997-2000); Senior Hydrogeologist, Fluor Daniel GTI, Inc. (formerly Groundwater Technology, Inc.) (1995-1997); field, Staff and Project Geologist, Groundwater Technology (1987-1995).

TECHNICAL SPECIALTIES
Since joining the environmental services and consulting industry over 30 years ago, Mr. Wiest has been responsible for the design and oversight of hydrogeologic investigations, and the cleanup of Brownfield, state voluntary, state transfer program, CERCLA and RCRA sites across the United States. Mr. Wiest's work in support of redevelopment projects has also included the pre-acquisition due diligence of large complex facilities and portfolio of facilities located in multiple jurisdictions, characterization, decontamination as well as the decommissioning of commercial, and industrial facilities including multi-million-dollar multi-phase projects.

In addition to the above, Mr. Wiest routinely develops complex conceptual and computer-based models, selects remedies, and develops implementation plans. Mr. Wiest applies conceptual, analytical, and numerical modeling techniques to determine and simulate the flow, fate, and transport of groundwater, surface waters, subsurface air, and both dissolved- and separate-phase contaminants at client properties and is experienced in the use of various data management and 2D and 3D tools to analyze and display hydrogeologic and chemical distribution data.

Mr. Wiest has worked on complex and sensitive sites across the United States and abroad in Canada and Europe including litigation projects. He has extensive experience in the implementation and analysis of aquifer characterization tests, as well as the design, installation, and operation of remediation and recovery systems to accomplish on-site aquifer restoration at chemical and petroleum refineries, terminals, and pipelines, as well as industrial, utility, commercial, and underground storage tank facilities.

In addition to these responsibilities, he provides direction to remote and local staff on the selection and implementation of computer models and oversees modeling tasks throughout the company.

While a Senior Hydrogeologist at the IT Group and Fluor Daniel GTI, Mr. Wiest oversaw the implementation of various innovative remedial technologies, such as advanced in-situ oxidation (i.e., permanganate), hot air injection and enhanced bioremediation including the modeling of these technologies at various sites across the corporation. Additionally, he had technical oversight, training and mentor-ship responsibilities for geologists and hydrogeologists throughout the corporations. Training responsibilities included senior instructor at annual in-house Remediation Specialist Training weeks where he led hydrogeology, site investigation and design classes for groups brought in from around the world.

REPRESENTATIVE PROJECTS

- **Project Principal, Major Urban Redevelopment, Boston, Massachusetts.** Provided comprehensive environmental services during the redevelopment of a 100-year-old landmark building complex in downtown Boston, Massachusetts. Work included ASTM Phase I report, asbestos and hazardous building material surveys, preparation of pro-forma remediation estimates, development of interior decontamination plans and technical specifications (including asbestos abetment, lead paint abatement, PCB containing ash, building materials and ballast; radioactive signage petroleum impacted soil and solvent impact sludge); oversight of on-site abatement and demolition contractors and on-site owners representative

with regard to abatement, remediation, and health and safety.

- **Project Principal, Comprehensive Investigation, Facility Demolition and Redevelopment, Industrial Facility, Connecticut.** Conducted a multifaceted environmental and facility decontamination/demolition project at a 100-year-old, 20-acre former precious metal fabrication facility in Fairfield, Connecticut. The facility is located near the coast and includes over 4 acres of wetlands while the main portion of the facility was constructed on the site of an old rock quarry. Designed and executed an investigation that relied on relatively low-cost, fast turn-around techniques to determine locations for more detailed and invasive techniques. Concurrent to the initial facility investigation, a multi-phased wetlands investigation was completed that included delineation, surface water and sediment sample collection and risk evaluations. Additionally, during the same initial six-month period that the above tasks were completed, a permitted hazardous waste storage area closure plan was completed. Following a review of the initial data, a follow-up investigation resulted in a site conceptual model and remedial action plan that facilitated the transfer of the upland portion of the Site to a new owner, was quickly and cost effectively completed. Following the transfer of the property, Roux managed and oversaw the decontamination of the facility interior (i.e., asbestos and lead abatement, process equipment decontamination and hazardous material disposal), facility demolition and the remediation of site soils. Containments of concern included numerous metals, including free-phase mercury, residual and separate-phase hydrocarbons, PCBs, and solvents. The Site was successfully redeveloped as a retail center and regulatory closure has been achieved.
- **Project Principal/LEP, Brownfields Redevelopment, CT LEP.** Redevelopment of an urban property consisting of 30 individual former tax lots. The project, which included Phase I and Phase II ESAs (investigation of soil, groundwater), Remedial Action Plan preparation, waste pre-characterization of soils targeted for excavation and off-site disposal, has received a Brownfields targeted loan from the Connecticut Department Economic and Community Development, following the submission of a successful application. Additional services included project advocacy with Connecticut Environmental Justice Program and representation at various public meetings.
- **Senior Hydrogeologist, Oxidation Remedy, Superfund Site, Maine.** Evaluated data collected during $KMnO^4$ pilot test conducted at a Superfund site impacted by a mixture of petroleum hydrocarbons and chlorinated solvents to assess applicability as a saturated zone remedy. Data was used to design and implement large scale tests that included the injection of both additional $KMnO^4$ and $NaMnO^4$ through existing soil vapor extraction wells. Data collected to date indicates site wide reductions in target compound concentrations.
- **Principal Hydrogeologist, Confidential Client, Massachusetts.** Using EVS and saturation profile data generated with API tools, prepared a series of complex three-dimensional LNAPL visualization to assess the efficacy of on-going recovery system operation, to calculated mass-in-pace and to identify additional release events. The EVS model was coupled with API software through custom Excel spreadsheets to evaluate LNAPL thickness and saturation data collected over approximately 10 years of monitoring.
- **Principal Hydrogeologist, Remedial Design and Implementation, Industrial Facility, New Jersey.** To address DNAPL residual and dissolved chlorinated solvents located beneath two buildings the first of its kind horizontal electrode Electrical Resistance Heating remedy was designed and implemented at a former dry cleaning fluid redistribution facility. The ERH system consists of traditional vertical electrodes and horizontal electrodes that were installed under an operating facility using directional drilling techniques to address source areas located in unconsolidated overburden material as well as shallow weathered bedrock. Additional design concerns included a high-pressure natural gas pipeline adjacent to the heating zone that required additional engineering evaluations to ensure safe operation during the heating-phase of the project.
- **Principal Hydrogeologist, Confidential Client, California.** Provided expert review of third-party modeling efforts of a large inter-basin chlorinated solvent plume developed to assess migration potential and impacts of various pumping-based remedies on groundwater levels and clean-up effectiveness.
- **Principal Hydrogeologist, Litigation Support, Multiple Projects.** Developed analytical and numerical fate & transport models to evaluate timing of releases, migration rates, reliability of modeling results relied upon by others and to support the allocation of response costs.
- **Senior Hydrogeologist, In Situ Oxidation of DNAPL Pilot Test, Cape Canaveral, Florida.** Designed and implemented hydrogeologic aspects of $KMnO^4$ pilot test conducted to evaluate in-situ oxidation of DNAPL at a former Cape Canaveral Launch Complex. Groundwater chemistry data including a non-reactive tracer (fluoride) added to the $KMnO^4$ solution, groundwater pressure (head) and operation data was evaluated to assess injection radius of influences.
- **Senior Hydrogeologist, Department of Energy Site, Texas.** Developed innovative second-order modeling techniques to evaluate laboratory bench scale data on in-situ oxidation of

dissolved explosives (RDX). Laboratory bench data was used to calibrate a 'reactor' model built using MODFLOW and RT3D. Following calibration, models were used to help design field pilot test. Modeling results helped evaluate mass of injected permanganate, injection rates, injection schemes and test duration.

- **Principal Hydrogeologist, Comprehensive Investigation and Remedial Design, Industrial Facility, Massachusetts.** Performed comprehensive investigation to characterize release and define extent of chlorinated solvents in heterogeneous unconsolidated zone and fractured bedrock. Investigation techniques included seismic and resistively geophysics, bedrock coring, and packer testing. Field data was integrated into a three-dimensional visualization model using the EVS. Investigation results revealed a complicated, vertical migration pathway that extended through on-site overburden aquifer, fractured bedrock, and bedrock underlying a residential community. Remedial design activities included air sparge; multi-phase, high-vacuum extraction; and aquifer pumping tests. Final design included an array of 10 multi-phase, high-vacuum extraction wells. Also proposed natural attenuation remedy to address residuals remaining after active extraction.
- **Principal Hydrogeologist, Confidential Client, Massachusetts.** Provided litigation support and courtroom testimony with regard to the effects of newly installed storm water management systems on neighboring properties. Evaluations included the review of designs; the pre and post development grade changes effects on storm water velocities and erosion; and the preparation of a numerical groundwater model to evaluate the impact to water table elevations approximately 1,000 cubic yards of contaminated soils at a site adjacent to the Massachusetts seacoast. System was designed to lower the water table by six feet and to compensate for water table fluctuations caused by ocean tides. The system successfully maintained a dry hole required to pour a concrete vault and footings prior to the installation of storage tanks.
- **Project Principal, Major Urban Redevelopment, Boston, Massachusetts.** Provided comprehensive environmental services during the redevelopment of a 100-year-old landmark building complex in downtown Boston, Massachusetts. Work to date has included ASTM Phase I report, asbestos and hazardous building material surveys, preparation of pro-forma remediation estimates, development of interior decontamination plans and technical specifications (including asbestos abetment, lead paint abatement, PCB containing ash, building materials and ballast; radioactive signage petroleum impacted soil and solvent impact sludge); oversight of on-site abetment and demolition contractors and on-site owners representative with regard to abatement, remediation and health and safety.
- **Senior Modeler, Fate-and-Transport Modeling, Refining and Bulk Storage Facility, Netherlands.** Provided oversight and direction in the preparation of a sophisticated three-dimensional groundwater flow and contaminant transport model of a former aboveground storage area at an active petroleum and chemical refining and bulk storage facility in Northern Europe. Model was prepared to assess potential impact to two nearby rivers, assess source areas and future remedial designs. Prepared initial model following on-site inspection, discussions with facility managers, and review of existing data. Provided on-site training so that local staff could complete and finalize the model with remote oversight.

PROFESSIONAL TRAININGS

OSHA 40-Hour Safety Training for Hazardous Waste Activities

OSHA 8-Hour Refresher Training for Hazardous Waste Activities (annual)

OSHA 8-Hour Supervisor Training for Hazardous Waste Activities

MSHA Part 48 Surface Metal/Non-Metal Mine Safety Training

Certified Smith System® Driving Instructor

PROFESSIONAL AFFILIATIONS

National Ground Water Association

Association of Groundwater Scientists and Engineers

Environmental Professionals of Connecticut

American Society of Testing and Materials

PUBLICATIONS

"Petroleum Recovery at Marine Terminals," Bulk Storage Facility Environmental Seminar, September 1991, White Plains, NY.

"Determination of Hydrogeologic Characteristics and Evaluation of Hydrocarbon Recovery System Performance in Tidally Influenced Aquifers," Focus Conference on Eastern Region Groundwater Issues, October 1991, Portland, ME.

"Groundwater Remediation Technology - Effectiveness and Cost," The American Ground Water Trust Information Workshop, April 1992, Stow, MA.

"Air Sparging and Soil Vapor Extraction for Site Remediation," Environmental Business Strategies Breakfast Seminar, May 1992, Newton, MA.

"The Application of a Conceptual Groundwater Flow Model to Determine Potential Impacts to a Public Water Supply Well Located Near Several Surface Water Bodies," Focus Conference on Eastern Region Groundwater Issues, October 1992, Newton, MA.

"Customized Data Management for Solid Waste Landfill Compliance Monitoring" TAPPI International Environmental Conference, May 1997, Minneapolis, Minnesota.

"Closure of Source Control Remedy for Contaminated Soils: Union Chemical Superfund Site." 16th Annual International Conference on Contaminated Soils, Sediments & Water, 2000, UMASS, Amherst, MA

"The Design and Installation of Horizontal Electrodes under an Operating Facility for Rapid DNAPL Removal Using Electrical Resistance Heating" Battelle Eighth International Conference Remediation of Chlorinated and Recalcitrant Compounds May 21-24, 2012. Monterey, California.

SHORT COURSE INSTRUCTOR

Risk Assessment Short Course. 1992. "An Introduction to Contaminant Transport Modeling," Worcester, Massachusetts.

"Hydrogeology and Elements of a Site Assessment." 1993, Norwood, Massachusetts.

Groundwater Technology and Fluor Daniel GTI Remediation Specialist Training Course, 1994 – 1997, Tampa, Fl, Denver Co, Albuquerque, NM