

& Management

Brownfields / Due Diligence



**Ecological Services** 



**Engineered** Natural Systems

Industrial Services

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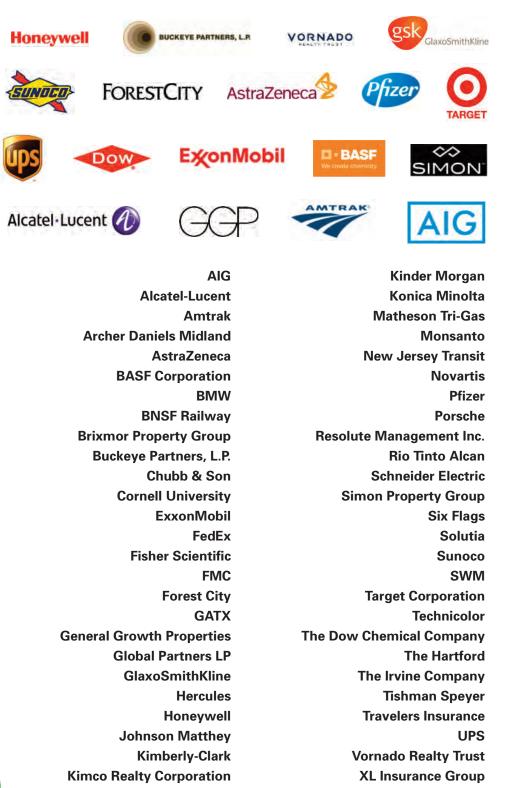
**Insurance** Support

Litigation Support

**Petroleum-Energy** 

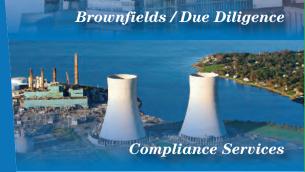
## **OUR CLIENTS**

Roux Associates is privileged to provide consulting services to some of the largest and most successful companies in the world. The following are just a handful of our industry-leading clients:



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Engineered Natural Systems





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**Insurance** Support



**Petroleum-Energy** 

"Roux Associates consults for some of the largest and most sophisticated industrial corporations, real estate developers, and law firms in the nation who retain our firm to solve their most difficult and challenging environmental problems. We know that earning and maintaining this level of trust from our clients—who can and do hire the best consultants available—requires providing exceptional service and top notch technical capabilities, project by project, each and every day."

Paul H. Roux, Chairman



## **ROUX ASSOCIATES**

#### **About Roux Associates**

The Roux organization applies sophisticated scientific, technical, and managerial resources to develop and implement effective, efficient, sustainable solutions. In short, we solve our clients' most challenging environmental problems; and we provide our consulting and project management services to an impressive list of Fortune 500 and public sector clients nationwide.

Founded over 30 years ago, Roux Associates' work involves large complex environmental remediation projects, including Superfund sites, chemical and manufacturing plants, and petroleum refineries and distribution terminals. Today, we are an employee-owned company with approximately 300 environmental professionals in a variety of science and engineering disciplines, providing a mixture of traditional environmental site remediation and compliance services, as well as cutting-edge technical solutions.

"Roux Associates continues to provide excellent design, technical support, and guidance on various remediation projects for our company. We are continually impressed with their innovative approach to problem solving and vast knowledge of regulatory issues."

Bryan K. Stolte, Ph.D., C.I.H., Senior Mgr., Env. Systems & Remediation / Due Diligence, Alcatel-Lucent

Our strong history with major Superfund, RCRA, and other regulatory-driven projects is now being applied to some of the most complex Brownfield redevelopment projects in the United States. Moreover, our innovative Engineered Natural Systems (ENS®) technologies are being employed in remediation, stormwater runoff, and restoration projects in a cost-effective and sustainable fashion.



## THE ROUX TEAM

Consulting is all about people. At Roux Associates, our best product is the smart and creative thinking we provide to our clients every day. This means we must hire, develop, and retain the best technical people in the business.

We recruit from some of the most prestigious environmental and engineering



college programs in the United States. We focus on hiring technical professionals with advanced degrees in key disciplines, and we provide an extensive in-house mentoring and technical development program. Equally important is on-the-job training, where we provide diverse project experience under the guidance of Principal level personnel.

We continually challenge our professionals with new opportunities in a supportive, healthy, and safe environment. The result is a highly motivated group of advanced-degreed professionals in the fields of engineering (civil, mechanical, chemical, industrial, and environmental), hydrogeology, geology, geochemistry, chemistry, biology, toxicology, and industrial hygiene, supported by a dedicated staff of database, graphics design, and CADD professionals.

Our professional staff has completed thousands of site assessments and remediation projects nationally and internationally, provided global compliance services to many multinational corporations, and provided expert witness services on hundreds of complex environmental litigation cases.

Collectively, our staff's goal is to provide the best quality and service in the environmental consulting industry. This is achieved by the close involvement of senior management from the proposal stage to project initiation, and through to project completion.



#### Focus on Safety:

Safety is always of paramount importance at Roux. Our staff is trained to implement and follow safe practices on all projects—a core value that is reinforced in our field activities every day.

Roux Associates is honored to have received multiple major oil company awards recognizing our flawless safety performance and effective implementation of behavior-based safety programs.

## **BROWNFIELDS/ DUE DILIGENCE**



## Converting Environmental Liabilities into Assets

The professional staff at Roux Associates has extensive experience providing timely and costeffective consulting services to the real estate

industry, particularly at Brownfield sites. Our use of strategic planning and negotiations during site redevelopment focuses on completing the redevelopment in minimal time—thereby saving costs—and produces a cleanup outcome that is consistent with the intended future use of a property—quickly turning the sites into revenue-producing developments.

#### **Brownfield and Site Redevelopment Services:**

- Property Transfer Support and Due Diligence
- Site Investigations and Remedy Selection
- Remedial Design, Waste Characterization, Construction Oversight, and O&M
- Facility Decontamination and Demolition
- Asbestos, Lead-Based Paint, and Mold Assessments and Abatements
- · Community and Indoor Air Monitoring Programs
- · Stormwater and Wastewater Management
- · Wetland Assessments and Mitigation
- · Vapor Intrusion Investigations and Remedy Design
- Site Management Plans

#### **Representative Developer Clients:**

- Brixmor Property Group
- Cornell University
- Equity One
- Forest City
- General Growth Properties
- Kimco Realty Corporation
- Related Companies
- Rouse Properties
- Shea Properties
- Simon Property Group
- Storm Properties
- Target Corporation
- Thor Equities
- Tishman Speyer
- Vornado Realty Trust

#### **MARKET SECTORS:**

- Colleges and Universities
- Commercial / Office
- Data Centers
- Entertainment / Sports Facilities
- Healthcare
- Hotel / Hospitality
- Mixed Use
- Multifamily / Residential
- Municipalities
- Parks and Recreation
- Retail
- Senior Housing
- Warehouse / Industrial

"As a leading developer of urban and Brownfield sites, we have relied exclusively upon Roux Associates' environmental expertise. Their work has been a significant factor in the success of our projects with environmental challenges."

Robert Sanna, Executive Vice President Forest City

## **COMPLIANCE SERVICES**

## Expert Advice to Help Guide You Through Complex Environmental Regulations

Roux Associates provides a wide range of regulatory compliance and management consulting services to corporate, legal, and insurance industry clients. Services are provided for compliance with requirements of Resource Conservation and Recovery Act (RCRA); Underground Storage Tank (UST) Regulations; Occupational Safety and Health Act (OSHA); Clean Water Act (CWA); Clean Air Act (CAA); Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); Emergency Planning and Community Right to Know Act (EPCRA) / Superfund Amendments and Reauthorization Act (SARA) Title III; Oil Pollution Act (OPA); Hazardous Materials Transportation Act (HMTA); Occupational Safety and Health Administration (OSHA); and numerous state and local programs.

"Roux Associates completed the environmental compliance and remediation projects for us on time and on budget. The quality of the work was excellent..."

A.W., Environment Manager FedEx

We also assist in developing, implementing, and maintaining environmental management systems according to ISO 14001, as well as client-specific needs. We bring a multi-disciplinary expertise to bear in understanding the statutory and regulatory implications, as well as the potential exposure to environmental liabilities associated with any business functions.



#### **COMPLIANCE SERVICES:**

- Environmental, Health and Safety Auditing
- Health and Safety Training
- Industrial Hygiene
- Exposure Assessment and Risk Analyses
- Expert Testimony
- Accidental Release Modeling
- Facility Response Plans
- Spill Prevention Plans
- Stormwater Management
- Hazardous Substance / Community Right to Know Reporting
- Facility Engineering and Permitting
- Air Permitting (Title V, NSR, PSD, etc.)
- Air Permitting Compliance Audits
- Emissions Inventories
- Source Testing Management
- Air Toxics Characterization
- Atmospheric Dispersion Modeling
- Continuous Emissions Monitoring (CEM)
- Air Emissions Control Engineering
- Reasonably Available Control Technologies (RACT)
- Best Available Control Technologies (BACT)
- Maximum Achievable Control Technologies (MACT)
- Carbon / Greenhouse Gas Management

## **ECOLOGICAL SERVICES**



#### **ECOLOGICAL SERVICES:**

- Wetland Delineations, Evaluations, and Monitoring
- Land Use Permitting
- Arc GIS Mapping and Data Analysis
- Habitat Assessments
- Wildlife Inventories
- Rare, Threatened, and Endangered (RTE)
  Species Surveys and Management Plans
- Vegetation Inventories
- Invasive Species Surveys and Management
- Sediment, Surface Water, Groundwater Sampling and Analysis
- Hydrologic Studies

## Creative Designs to Enhance Your Portfolio

Roux Associates specializes in the management, design, and implementation of ecological assessment and mitigation projects. We have expertise in a variety of environments ranging from freshwater wetlands and tidal wetlands to riparian ecosystems—including sustainable shoreline stabilization design—to grassland and woodland habitats.

Roux staff develops mitigation plans designed to use and promote the growth of native vegetation, incorporating varying hydrologic zones that in turn support a diverse array of plant communities and wildlife. Roux also routinely works with clients to obtain certification of projects from the Wildlife Habitat Council, a national organization focused on habitat conservation and management through business partnerships and education.

## ENGINEERED NATURAL SYSTEMS (ENS®)

# Sustainable Approaches to Environmental Challenges

Roux Associates is a nationally recognized leader in the design and implementation of sustainable "Green" ENS® treatment technologies. Our



award-winning ENS<sup>®</sup> Group focuses on the application of these technologies to treat groundwater and surface water contamination, stormwater runoff, landfill leachate, contaminated soils and sediments, and industrial / municipal wastewaters. Roux's ENS<sup>®</sup> designs operate passively, require little to no power, and thus reduce O&M requirements and costs.

#### **Constructed Treatment Wetlands:**

Constructed Treatment Wetlands (CTWs) are currently being used world-wide for efficient and cost-effective treatment of a variety of wastewater effluents with complex contaminants (e.g., BTEX, PAHs, metals, and CVOCs). Roux has been actively involved in developing and applying CTW technology since 1993. Our use of carefully selected media, sequencing, and passive hydraulic controls are cost-effective, reliable, and sustainable even under extreme environmental conditions.

#### **Phytoremediation:**

Roux has amassed over 15 years of phytoremediation experience, with over 70,000 trees installed for a variety of functions. Phytotechnologies are the use of vegetation for the in situ treatment of contaminated media (e.g., groundwater, surface water, soils, and sediments). It is a rapidly evolving passive technology that is gaining widespread support as an alternative to more costly conventional approaches, while also facilitating carbon sequestration.

#### Natural Media Filtration:

Natural Media Filters (NMFs) are compost or peat based systems designed to remove and sequester heavy metals, oils, greases, nutrients, and organics from various wastestreams. NMFs utilize geochemical reactions to remove contaminants, without the addition of chemical reagents, through filtration, absorption, and chemical transformation. The performance of NMFs constructed by Roux Associates for PCB removal has been excellent to date, with sustained PCB removals to levels well below 100 parts per trillion (ppt).





## **INDUSTRIAL SERVICES**

## Finding Environmental Solutions for Pharmaceutical, Chemical, and Manufacturing Companies

Roux Associates has extensive experience with the

investigation and remediation of groundwater, soil, and sediment contamination at industrial sites. Over the past 30 years, Roux has provided a full range of services from initial site assessment, to development of the mitigation design, through construction oversight and monitoring to ensure overall project success. Roux specializes in the design and implementation of site-specific, innovative, and cost-effective site investigation and remediation. Our experience and expertise includes sites affected by volatile organic compounds, petroleum hydrocarbons, chlorinated hydrocarbons, metals, pesticides, PCBs, and emerging contaminants. Our clients' goals and objectives are a critical component in our remedy selection process.

#### **INDUSTRIAL SERVICES:**

- Property Transfer / Due Diligence
- UST Management
- Permitting and Compliance Audits
- Contingency Planning
- Stormwater Compliance and Management
- Wastewater Management
- Risk Assessment
- Remediation System O&M
- CERCLA RI / FS
- Cost Recovery Litigation Support
- RCRA Facility Assessments and Investigations
- Industrial Hygiene, Health and Safety
- Wetland Assessments and Mitigation
- Facility Decontamination / Demolition
- Strategic planning to comply with upcoming regulations
- Site Investigation / Remedy Selection
- Remedial Design, Construction, Oversight
- Facility Closures and Post-Closure Monitoring
- Building Investigations and Assessments
- Vapor Intrusion Modeling



## **INSURANCE SUPPORT**



## Fair Evaluations of Insurance Liabilities and Costs for Environmental Projects

Roux Associates has supported more than 45 national, international, and regional insurance carriers in their efforts to fairly evaluate costs and liabilities related to environmental investigations and remediation activities due to claims brought by their insureds.

Our experience in performing environmental investigations and clean-ups for both Fortune 100 clients and independently owned companies provides us an informed basis to evaluate environmental costs. We use the experience and knowledge we gain from competitively bidding these projects to fully understand the cost implications associated with an environmental insurance claim. Our staff is highly qualified, having the knowledge of the insurance, financial, and environmental issues that exist for a complex claim.

Our ongoing work at contaminated properties throughout the U.S. and internationally, provides us with valuable, front-line knowledge regarding clean-up trends and technologies. All our environmental consulting work, whether for a major oil company, small business or insurance carrier, is focused on one goal: obtain regulatory closure for the site as quickly and cost-effectively as possible.

#### Our areas of service to insurance carriers include:

#### **Environmental Claims Evaluation:**

Since 1997, Roux has been providing national, international, regional insurance carriers and their outside counsel with technical environmental support as they settle and resolve claims for environmental contamination of both owned and non-owned properties.

#### **Environmental Underwriting Support:**

Roux supports underwriting and loss control expertise for various pollution policies.

#### **Remedial Oversight:**

Oversight services focus on interlocked aspects of environmental projects: project strategy, project quality, and project costs.

#### "Take Over" of Remediation Projects:

For our insurance carrier clients and their policy holders, Roux has "taken-over" remediation projects where either remediation costs have spun out of control or previously submitted remediation plans have been rejected by environmental regulators.



#### **Expert Witness Services:**

For over 20 years, we have provided expert witness services for our insurance clients. Our experts have testified at trial and dispute resolution hearings across the country and internationally.

#### **Oil Spills and Related Claims:**

Roux provides incident investigation and cost containment services related to oil spills and other environmental releases.



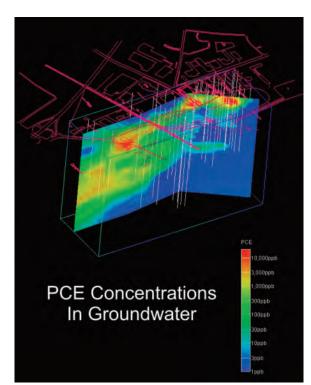
## **LITIGATION SUPPORT**



## Providing Persuasive In-Depth Scientific Analyses and Expert Testimony for Litigation

Roux Associates' team of experts has evaluated complex technical issues in dispute during litigation, and formulated expert opinions for presenta-

tion in reports, depositions, and trials. Team members have provided expert witness testimony over a broad range of issues including the source and timing of chemical releases, groundwater contaminant fate and transport, the necessity and appropriateness of site cleanup costs, equitable allocation among PRPs, risk assessment, data validity, and compliance of response actions with federal and state regulations.



### **EXPERT OPINION TOPICS:**

- Air Quality
- Allocation
- Cost Evaluation & Recovery
- Fate & Transport
- Forensic Evaluation
- Standard of Care

#### **Related Services:**

- 2-D and 3-D Data Visualization
- Georeferencing current and historical site features to soil and groundwater data
- Chemical fingerprinting to identify sources of contamination
- · Preparing affidavits, declarations, and expert reports
- Assisting in document discovery
- · Assisting in preparing for fact and expert witness depositions
- Assisting in preparing for opposing expert depositions
- Trial preparation and demonstratives
- Development of trial exhibits



## **PETROLEUM-ENERGY**

## Environmental Consulting and Management Services for the Oil and Gas Industry



Roux Associates has provided environmental

services to the petroleum-energy industry since the mid-1980s. We have successfully completed hundreds of remedial projects across the upstream, mid-stream, and downstream segments of the industry; and have experience in remediation of all types of products, ranging from crude oil to gasoline. The Petroleum Industry faces inherent safety hazards at operational petroleum facilities, and the corresponding regulatory and public scrutiny. We apply a broad array of technical disciplines to meet the evolving environmental challenges the industry faces.

Roux has practical experience in the evaluation and implementation of various new and/or innovative in situ technologies for remediation of petroleum impacted sites, including: chemical oxidation, enhanced bioremediation, natural source zone depletion, and surfactant flooding among others. There are many ways to remediate petroleum contamination. In most cases, the correct approach is based upon technical factors, such as the type and amount of contamination, and subsurface geology, as well as business factors that include schedules or the need to minimize impacts to site business operations. Our combination of scientific expertise and practical hands-on experience results in cost-effective solutions tailored to meet our clients' objectives.

#### Site Assessment and Remediation:

- Property Transfer / Due Diligence
- Innovative Site Characterization
- · Vapor Intrusion Assessment and Mitigation
- Risk Assessments
- NAPL, Groundwater and Soil Remediation
- · Wetlands and Sediments
- Innovative In Situ Treatment Technologies
- Remedial Alternatives Analysis, Design, Construction, and O&M
- Integration of Site Remediation with Redevelopment Activities

#### **Project Management / Portfolio Management:**

- Strategic Planning
- Contractor / Consultant Review and Oversight
- Onsite Management Personnel
- Regulatory Advocacy

#### Litigation Support and Expert Witness Services:

- Environmental Forensics
- Source Identification
- Release Timing
- Apportionment
- Hydrogeology / Contaminant Fate
  and Transport
- Remediation Cost Evaluations and Cost Allocations

#### **Compliance Services:**

- Stormwater / Wastewater Solutions
- Contingency and Compliance Plans
- Permitting Air, Water, Land Use
- UST Management

Photo Taken By: Barbara Roux, 2014

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http://www.rouxinc.com or scan with your smartphone:



## Solving Complex Environmental Challenges For Clients Nationwide

