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Affiliations

Whitestone Associates, Inc. is an affiliate of the Bohler Engineering group of companies.



Bohler Engineering offers a complete complement of civil engineering services that are backed by expert staff, regulatory savvy, and state of the art technology.

- Civil & Consulting Engineers
- Project & Construction Managers
- Architectural & Structural Engineers
- Land Use Planners
- Landscape Architects

www.bohlereng.com



Control Point Associates sets the standard in Land Surveying precision, efficiency and comprehensiveness with GPS technology.

- Boundary and topographic surveys
- Subdivision
- Construction Stakeout

www.cpasurvey.com



Atlantic Traffic & Design Engineers provides specialized civil engineering consulting services in the area of traffic engineering, transportation analysis, and planning.

www.atlantictraffic.com



Whitestone Associates provides complete, integrated environmental and geotechnical services.

www.whitestoneassoc.com

Company Overview

Whitestone Associates, Inc. provides complete, integrated environmental and geotechnical engineering and consulting services to its client base of international and national corporations, law firms, engineering companies, real estate developers and investors, financial institutions, insurance underwriters, government and municipal agencies, and private sector clients.

History

Whitestone was founded in 1994 to provide specialized environmental compliance and consulting services. Geotechnical engineering capabilities were added in 1995. Today, Whitestone provides a full range of integrated environmental and geotechnical consulting and engineering services.

Location

Whitestone services clients from New England through Mid-Atlantic U.S. from offices located at:

NEW JERSEY

35 Technology Drive
Warren, NJ 07059
908.668.7777 • 908.754.5936 fax
www.whitestoneassoc.com

PENNSYLVANIA

New Britain Corp. Center
1600 Manor Drive, Suite 220
Chalfont, PA 18914
215.712.2700 • 215.712-2701 fax

VIRGINIA

22630 Davis Drive, Suite 200
Sterling, VA 20164
703.464.5858

COLORADO

278 Cottonwood Drive
Evergreen, CO 80439
303.670.6905 • 303.679.1598 fax

Insurance

Whitestone is fully-insured to provide the environmental and geotechnical engineering and consulting services outlined in this SOQ.

Current coverage includes:

- Environmental & Professional Liability - \$4,000,000
- General Liability - \$2,000,000
- Automobile Liability - \$1,000,000
- Worker's Compensation - Statutory Limits
- Commercial Umbrella (G/L, Auto, Worker's Compensation) - \$5,000,000

Certificates of Insurance are available upon request.

Environmental Services

- Due Diligence Investigations
- Site Remediation Budgeting & Management
- UST Evaluation & Closure
- Brownfields Redevelopment
- Permitting & Compliance Management
- ACM, LBP, IAQ, Mold, Wetlands Evaluations
- Expert Reporting & Testimony Services



Geotechnical Services

- Geotechnical Investigations
- Pavement Evaluation/Rehab
- Stormwater Management Basin/Seasonal High Groundwater & Permeability Testing
- Foundation Design
- Retaining Wall Evaluation & Design
- Septic System Design and Permitting
- Construction Phase Testing & Inspection Services
- Forensic Evaluation
- Expert Witness Services



Services

Whitestone Associates, Inc. provides a full range of integrated environmental and geotechnical engineering and consulting services.

ENVIRONMENTAL services provided by Whitestone include:

- Due Diligence Investigations and Property Transfer Related Site Evaluations (Phase I ESAs, Transaction Screen Process Assessments, Phase II Site Investigations/Remedial Investigations, Remedial Action Feasibility Analyses and Budgetary Cost Estimates, and Environmental Liability Protection/Insurance Procurement Assistance).
- Brownfields Redevelopment (Site Evaluation, Fixed-Fee Remediation).
- Remedial Design/Remediation Management (Contaminated Site Encapsulation, Bioremediation, *In-Situ* Soil and Groundwater Treatment Systems, etc.).
- Underground Storage Tank evaluation and closure.
- Asbestos, Lead-Based Paint, Indoor Air Quality, Mold, and Wetlands Evaluation, Abatement, Management, and/or Restoration Programs.
- Permit Coordination & Compliance.
- Waste Management (TSDF/Transporter Audits; Waste Management, Minimization, and Pollution Prevention Programs).
- Litigation Support/Expert Witness Services.
- Compliance Training (OSHA H&S, Environmental Management).

GEOTECHNICAL services provided by Whitestone include:

- Subsurface Geotechnical Investigations and Engineering Evaluation including design parameters and construction recommendations for foundations, pavements, floor slabs, retaining walls, ground improvement, earthwork and grading, groundwater control, seismic site classification and spectral response analyses.
- Seasonal high groundwater determination and permeability testing for use in stormwater management and/or on-site septic system design and permitting.
- On-site septic system design and permits including local and state permits and Water Quality Management Plan amendments.
- Soil classification and laboratory analyses for geotechnical parameters.
- Existing pavement assessment and life-cycle oriented repair and maintenance recommendations including plan and specification preparation, bid review, and construction phase inspection.
- Construction Phase Testing and Inspection Services, including soil density testing; footing/foundation inspections; pile load testing; concrete, masonry, mortar, steel, pavement testing and inspection, etc.

Client consultation services including final document review, budget analyses, bidding assistance, construction phase through service-life troubleshooting.

Licenses & Certifications

Professional Engineers
Licensed in: NJ, NY, CT, DE, MD, PA, VA

Certified Professional Geologist
Licensed in: IN, PA, TN, WY

Environmental:

NJDEP Licensed UST Closure and Subsurface Evaluation

NJDEP Cleanup Star Certification

NJDEP UHOT

NJ LSRP

GIS Systems Certifications

Licensed Asbestos Inspectors/Designers
Licensed Asbestos Safety Technician

Certified Lead Inspector/Risk Assessor/Designer

Certified Microbial Remediation Supervisor

Certified OSHA Hazardous Waste Supervisors

Professional Environmental Auditor

American Red Cross - First Aid/CPR

EnSys Immunoassay Field-Testing Method

Certified Wetlands Delineator

Geotechnical:

Certified Subsurface Sewage Disposal System Site Evaluator and Designer

Certified Concrete Field Testing Grade 1 Technicians - American Concrete Institute

Certified Portland Concrete Cement Inspectors

Certified Bituminous Asphalt Cement and PADOT Certified Asphalt Plant Inspectors

Certified Radiation Safety Officer

Certified NJSAT Plant Technologist

Certified Nuclear Density Gauge Operators - Troxler Laboratories

Personnel

Whitestone's environmental and geotechnical staff and managers have extensive training and experience in litigation support, waste management, environmental auditing, remedial design, remediation management, geotechnical exploration and engineering, and construction oversight.

The company's multi-disciplined staff includes licensed professional engineers, environmental auditors, certified professional geologists, licensed asbestos and lead inspectors, certified hazardous waste supervisors, and experienced construction inspectors and managers.

Whitestone is managed by:

- Thomas K. Uzzo, LSRP, PEA – President/Owner: Former USEPA Enforcement Officer with 24+ years of experience. Licensed professional environmental auditor. NJDEP certified for UST closure and subsurface evaluation, Cleanup Star, UHOT, and LSRP.
- Keith T. D'Ambrosio, PE, LSRP – Principal, Environmental Services and Pennsylvania Branch Manager: Licensed professional engineer in Delaware, New Jersey, New York and Pennsylvania with 20+ years of experience. NJDEP certified for UST closure and subsurface evaluation, Cleanup Star, UHOT, and LSRP
- Laurence W. Keller, PE – Director, Geotechnical Division (NJ Office): Licensed professional engineer in Delaware, Maryland, New Jersey, Pennsylvania and Virginia with 19+ years of experience.
- Christopher Seib, LSRP – Director, Environmental Services (NJ Office): Environmental manager with 11+ years of experience. NJDEP certified for UST closure and subsurface evaluation, Cleanup Star, and UHOT, and LSRP.
- James M. Morgan – Senior Project Manager: Civil engineer with over 17+ years of experience in geotechnical engineering and construction management.
- Keith Tockman, CPG, LSRP – Certified professional geologist with 34+ years of experience in environmental compliance, investigation, and remediation. NJDEP Cleanup Star and LSRP certified.
- Jeffrey T. Bauer, PG, LSRP – Project Manager, Environmental Division (PA Office): Environmental manager with 11+ years of experience. NJDEP certified for UST closure and subsurface evaluation, Cleanup Star, UHOT, and LSRP.
- Jeremy H. Hassett – Asbestos Program Manager: Certified EPA/AHERA asbestos building inspector with 12+ years of experience. Maintains active asbestos inspector certifications in New York State, New York City, Connecticut, Pennsylvania, Philadelphia and New Jersey.

Resumes for these and other key Whitestone personnel are available for review upon request.

Representative Client List

Abundant Life Community Development Corp.
Acadia Realty Trust
Advance Auto Parts
Alessi Organization
Amerada Hess Corporation
American Campus Communities
Applebee's
Arby's
Atkin Olshin Schade Architects
AutoZone, Inc.
Avis Rent-a-Car/Cendant
Ballard Spahr Andrews & Ingersoll, LLP
Bank of America
Beacon Looms, Inc.
Beattie Padovano, LLC
Bed, Bath & Beyond
Benderson Development Company
Best Friends Pet Care, Inc.
Blue Vista Properties, LLC
BP Products North America, Inc.
Borough of Stanhope, NJ
Boston Market
Boehringer Ingelheim Pharmaceuticals
Bohler Engineering, PC
Borough of Highlands
Borough of Princeton, New Jersey
Brandolini Companies
Brinker International
Burger King Corporation
Canon USA, Inc.
Capital One Bank
CB Richard Ellis
Celgene Corporation
Centro Properties Group
Chelsea Property Group
Chick-fil-A, Inc.
City of Rahway, New Jersey
Continental Bank
Costco Wholesale Corporation
CVS/Pharmacy, Inc.
Darden Restaurants, Inc.
Developers Diversified Realty Corp.
East Coast Storage/Storage Post
Education First, Inc.
ExxonMobil Corporation
Federal Realty Investment Trust
Gateway School
Genuardi's Family Markets
Haddad Organization, Ltd.
Hampshire Management Co.
Harmon Cove Towers Condo Association, Inc.
Heller Group LLC
Hilton Hotels Corporation
Hollister Construction Services
ING Clarion Partners
J&R Music World
Kmart
Knowledge Learning Centers
Krispy Kreme
Leggett & Platt, Inc.
Lennar Corporation / U.S. Home
Levin Management Corporation
Life Time Fitness

Client References

Whitestone's client base includes international and national corporations, law firms, engineering firms, real estate developers and agents, lending institutions, insurance underwriters, government and municipal agencies, and private sector clients.

Mr. Joseph J. Maraziti, Jr., Esq.
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150 John F. Kennedy Parkway
Short Hills, NJ 07078
973.912.9008

Mr. Brian Pall
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Development Corp.**
3 Manhattanville Road
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914.694.4444

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President
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Warren, NJ 07059
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Mr. Peter Pelissier
Executive Director
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Rahway, NJ 07065
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Bridgewater, NJ 08807
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McDonald's USA, LLC
105 Eisenhower Parkway
Roseland, New Jersey 07068
973.287.1407

Mr. John McKee, Regional
Services Development Manager
TD Bank, NA
9000 Atrium Way
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516.547.3647

Ms. Danielle DeVita
Senior Manager - Development
Chelsea Property Group
103 Eisenhower Parkway
Roseland, NJ 07068
973.403.6810

Ms. Judith D. Knop, PE
Vornado Realty Trust
210 Route 4 East
Paramus, NJ 07652
201.587.1000

Mr. Thomas Richards
Engineering Team Leader
Wal-Mart Stores, Inc.
2001 Southeast 10th Street
Bentonville, Arkansas 72716
479.273.4000

Representative Client List (Continued)

Lowe's Home Centers
 Maraziti, Falcon & Healey, LLP
 Mark Investments, Inc.
 Marriott Corporation
 McDonald's USA, LLC
 Milric Construction Corporation
 National Realty & Development Company
 NFI Real Estate
 Norris McLaughlin & Marcus, PA
 Old Country Buffet
 Panera Bread
 Penske Automotive Group
 People's United Bank
 Pep Boys
 Pepsi Cola Bottling Company of NY
 Pilot Travel Centers
 PNC Bank
 Preferred Real Estate Investment Trust
 Primax Construction, Inc.
 Primax Properties
 Public Storage, Inc.
 Quick Chek Corporation
 Raymour & Flanigan
 Real Marq Development Corporation
 Restaurant Depot
 Riker, Danzig, Scherer, Hyland & Perretti, LLP
 Rite Aid Corporation
 River Terminal Development Company
 Ruby Tuesday's
 Safilo USA, Inc.
 Safeway, Inc.
 Sears, Roebuck & Company
 Schenkel Shultz Architecture
 Shell Oil Company
 7-Eleven, Inc.
 Somerset Tire Service
 Stavola Construction
 Stop & Shop Supermarket Co.
 Storage Deluxe Management Co.
 Storage Specialists, LLC
 Strauss Discount Auto
 Sunshine Lighting Company
 Sunoco, Inc.
 Superfresh Food Markets
 TD Bank, NA
 Trammell Crow Company
 The Gale Construction Company
 The Great Atlantic & Pacific Tea Co.
 The Richmond Company, Inc.
 United Auto Group, Inc.
 U.S. Home Corporation
 Toys "R" Us
 Tristate Ventures, LP
 UBS Real Estate Investments, Inc.
 Village of Ridgewood
 Vineland Construction Company
 Vornado Realty Trust
 Wal-Mart Stores, Inc.
 Waldbaum's
 Walgreens
 Wawa, Inc.
 Wendy's Old Fashion Restaurants
 Yum! Brands, Inc.

Project Experience

Whitestone has completed over 10,000 environmental and geotechnical projects throughout the United States since 1994. Representative examples are depicted below:



Specialty Foundation Design & Inspection



Subsurface Investigation



UST Removal



CPT&I - Rebar Cage



CPT&I - Concrete Slab Pour



Pavement Evaluation/Rehab



Forensic Evaluation - Retaining Wall Failure



Contaminated Soil Removal

**Environmental &
Geotechnical Investigations,
Brownfield Redevelopment,
Site Remediation &
Construction Phase
Consulting**

STUDENT HOUSING PROJECT
Newark, New Jersey

Client:

Village at Newark, Urban Renewal, LLC

Period of Performance:

June 2003 to September 2006

Project Highlights:

- Environmental site investigation, remediation management, hazardous waste disposal, asbestos survey, and UST closure.
- Value engineering to provide most economical foundation solutions resulting in two foundation systems (shallow foundations and deep foundations).
- Drilled piers with rock sockets into rock to support 100 column foundations adjacent to historic NJ-Transit rail line.
- Percussion drilling to evaluate depth to rock and rock quality at each pier location.
- Vibration monitoring.
- Backfill inspection.
- Drilled piers, reinforcing steel cage, and concrete inspection.



Project Description:

The Student Housing Development included construction of a 13-story student dormitory building with retail space at the ground level, a six-story student dormitory building, and a five-story parking deck.

Subsurface conditions at the site consisted of historical fill, residual soil, weathered/competent rock. Oriented rock cores were obtained to evaluate the strike and dip of the bedrock. Rock joints were found to dip towards an approximately 15 feet high historic retaining wall constructed in 1926 by NJ Transit. Slope stability analyses were conducted to evaluate the effect of the proposed loads on the slope. Rock slope stability analyses revealed that the rock would fail due to the stress imposed by shallow foundations, and thus cause the historic retaining wall to collapse. The presence of the historic retaining wall created a challenging engineering/economical solution and mandated use of both shallow foundations and drilled piers.

In order to investigate the subsurface conditions while maintaining the project schedule, Whitestone conducted the subsurface investigation in several phases. The Pre-Demolition Phase was preliminary in nature and included limited soil borings to provide preliminary geotechnical design parameters. The Post-Demolition phase consisted of drilling soil borings, rock coring, oriented rock coring, and detailed laboratory analyses to evaluate the rock durability and the feasibility of constructing an underground stormwater infiltration system. In addition, the Post-Demolition geotechnical investigation included rock joint mapping based on information gathered from oriented rock coring; slope stability analyses, and geotechnical value engineering analysis which resulted in two foundation systems (drilled piers and shallow foundation). Upon completion of the pier design, and in an effort to expedite the construction schedule, Whitestone recommended utilizing percussion drilling technology to evaluate the depth to the top of the rock and the rock quality in each drilled pier location. This allowed for pre-fabrication of the steel gage and reduction of individual pier rock socket length.

Prior to the start of construction, Whitestone conducted various environmental due diligence investigations in support of the proposed redevelopment project. Specifically, Whitestone performed a Phase I ESA, ACM survey, and Phase II Site Investigation (SI) prior to and following the demolition of the site buildings. Recognized Environmental Conditions (RECs) and contaminant conditions identified during the ESA and SI initially were addressed by the property owner's environmental consultant. These RECs included a former sump pit, nine USTs, two contaminated soil hot spots, a below ground hydraulic lift, a hazardous material spill area and potential impacts to on-site groundwater conditions within the underlying bedrock. Due to the inability of the property owner's site contractor to complete the work within the required time frames, Whitestone was retained to complete the remainder of the RI/RA activities including installing groundwater monitor wells, additional post-excavation soil sampling, contaminated soil disposal, and NJDEP reporting. Documentation from prior environmental due diligence investigations, remedial investigations, and remedial actions conducted by the site owner's contractor and Whitestone were compiled into a comprehensive report for submittal to NJDEP with a request for No Further Action. Whitestone continues to provide environmental consulting services throughout the construction phase of the project in addition to acting as a liaison between NJDEP, the property owner, and financial institutions.

Environmental & Geotechnical Consulting & Engineering Services Retail Center Redevelopment

HAMILTON MARKETPLACE
Hamilton Township, New Jersey

Client:

Developer's Diversified Realty Corporation

Period of Performance:

1997 to 2003

Project Highlights:

- 220 acre multi-phase retail development.
- Coordinated with civil design and construction professionals to handle moisture-sensitive soils and shallow groundwater conditions, including detailed design recommendations for temporary access measures to be incorporated into final plan.
- Provided environmental investigation, NJDEP negotiation, and expert testimony at hearings to address arsenic levels in site soils including mitigation measures during construction.
- Consulted with multiple corporate retail clients with conflicting corporate specifications to enable most cost-effective use of challenging on-site soils while satisfying future tenant requirements.
- Provided full-time construction phase consulting, testing, and health and safety monitoring to ensure recommendations and NJDEP requirements were implemented.



Project Description:

The developers of the Hamilton Marketplace faced several challenges in their effort to redevelop a 220 acre former agricultural and orchard tract into a major regional retail center anchored by multiple big box tenants and comprising some 1,000,000 square feet of retail, restaurant, and commercial space. Early in the due diligence process, Whitestone conducted preliminary geotechnical and environmental investigations that identified site development challenges including shallow mottling (typically interpreted by NJDEP as shallow groundwater), extremely moisture-sensitive soils (elastic silts), and environmental concerns including abandoned USTs, hazardous materials/wastes, and residual arsenic in the soils from former agricultural pesticide application.

Considering the magnitude of site earthwork and grading required, the reuse of site soils was critical since importing and exporting substantial volumes of material would be cost-prohibitive. In addition, in order to make site designs workable, grades had to be cut substantially lower than apparent groundwater levels. In the ensuing geotechnical investigation, Whitestone provided a detailed hydrogeologic analysis, including piezometer tests and groundwater level contouring, to prove to NJDEP and the municipality that a site concept including phased stormwater basin construction to drain regionally perched groundwater would function properly. In addition, specific recommendations including the use of geogrids and soil conditioning were developed in order to maximize soil reuse and minimize costly undercutting and replacement.

Whitestone also consulted with multiple retail corporate entities (proposed tenants) that had individual and often conflicting specifications that would preclude using the on-site materials in various locations. Through careful analysis of grading plans, phasing, and negotiation of performance standards as opposed to material standards, Whitestone aided the client in successfully reusing the majority of the on-site materials, while still satisfying individual tenant requirements.

Whitestone identified environmental concerns including residual arsenic in the soils and developed specific soil management and health and safety plans to mitigate the condition. Whitestone provided expert witness testimony and obtained the necessary NJDEP approvals for the client. Whitestone also provided air monitoring and environmental site controls as needed to comply with local and state requirements.

Whitestone provided full time construction phase consulting, testing and inspection with a resident engineer and supporting staff to ensure the design phase recommendations were properly implemented. In addition to geotechnical and materials testing, environmental oversight and health and safety air monitoring also were provided.

Geotechnical, Environmental & Geological Evaluation Services

ALLENTOWN CROSSINGS
Adams Road and Nestle Way
Upper Macungie Twp., Pennsylvania

Client:

Opus East, LLC

Period of Performance:

November 2003 to June 2006

Project Highlights

- Identified site constraints early in design to value engineer site and structural plans.
- Developed detailed site recommendations and design details to mitigate potential adverse conditions associated with the carbonate rock geology.
- Delineated former mining area limits and developed subgrade improvement alternatives to avoid overexcavation and replacement of deep mine spoils.
- Performed Phase I ESA and Phase II SI within previously mined site areas.
- Provided Value Engineering and Pre-Bid Consultation Services.



Project Description:

Allentown Crossings is a light industrial development that serves several major metropolitan markets accessed through Philadelphia, Harrisburg, the Port of Newark and the Port of Baltimore. Whitestone's client, Opus East, LLC, developed large warehouse facilities in the tract, including the 290,000 square foot DHL package sorting and distribution facility shown above. As part of the overall tract development, Whitestone provided a full range of geotechnical and environmental services from due diligence evaluations prior to property purchase through design-phase subsurface investigations, environmental site characterization, geological hazard mapping, and construction phase consultation.

Under accelerated schedules during property due diligence review periods, Whitestone evaluated subsurface information relevant to potential cost and impactful conditions, and conducted preliminary geotechnical investigations designed to assess geotechnical issues including soil re-use options, depth to groundwater, karst characteristics, and impacts of potential problematic subsurface conditions. Whitestone's preliminary investigations were performed in accordance with Township subdivision and land development ordinances. Maps of geologic hazards associated with the sinkhole prone geology were created. Whitestone's environmental due diligence services included reviewing publicly-available records to determine if past or current environmental enforcement, investigative or corrective actions had been implemented at or in the vicinity of the properties or if culturally or historically sensitive areas had been documented on the sites as well as an assessment of potential recognized environmental conditions.

By identifying site constraints prior to acquisition, Whitestone tailored design phase investigations toward potential adverse development issues such as karst features (sinkholes, lineaments, and closed depressions) and a former mining area that was identified on one parcel. Whitestone delineated the former mining area and determined that it was located beneath proposed structures and access roadways. Whitestone's initial findings led to revising site plan concepts to minimize impacts due to poor subsurface conditions associated with uncontrolled mine spoils fill, moisture sensitive soils, and karst conditions. Whitestone developed cost-effective recommendations including:

- minimization of soil overexcavation and off-site disposal by mechanical subgrade improvement with a bi-axial geogrid,
- mitigation of earthwork delays with moisture sensitive soils through chemical stabilization, and
- repair of existing sinkholes.

Whitestone was an active part of the structural design team, and provided specific analyses for very heavily to very lightly structural loaded areas to value engineer foundation design.

During construction phases, Whitestone attended pre-bid conferences and coordinated value engineering measures based on specific means and methods of various site contractors, such as modifying asphalt lift thickness to expedite pavement operations.

Geotechnical & Environmental Investigation, Alternative Foundation Design & Construction Engineering Services

SELF STORAGE FACILITY
West Fordham Rd. and Harlem River Dr.
Bronx, New York

Client:

Post Management, LLC

Period of Performance:

November 2002 to February 2004

Project Highlights

- Riverfront redevelopment project over deep fill and organic soils.
- Developed unique foundation solution consisting of structural mat over geofoam block to preclude costly pile foundations.
- Found conditions precluding a septic system per New York City standards, however, proved septic feasibility to NYCDEP commissioner and designed and permitted on-site septic system.
- Provided environmental due diligence and asbestos abatement consulting services.



Project Description:

Cost-effective redevelopment of a former lumber yard facility at the foot of the Fordham bridge on the Harlem River in the Bronx was jeopardized by a number of problematic geotechnical and environmental conditions. Whitestone reviewed soil boring data obtained through the City of New York and preliminarily evaluated information relevant to the proposed redevelopment for a self-storage facility. Based on the proposed loading and deep compressible fill material and organic deposits, a very costly deep pile foundation system appeared necessary.

Whitestone worked with the design team including the architect and structural engineer who reduced the building weight using light-weight materials and accepted modifications to the foundation design to produce a relatively light, uniform and distributed mat pressure. Even the moderate increase in soil loading from the lightened building would cause excessive settlement. In addition, materials were characterized as unsuitable bearing material per New York City building code.

Whitestone developed a unique solution consisting of removing a limited portion of soil equivalent to the proposed building weight and replacing it with high strength geofoam blocks capable of supporting the building weight. Because the weight of soil equivalent to the new proposed building weight was removed and replaced with the lightweight geofoam, the compressible soils experienced no increase in pressure, therefore limiting settlement to within tolerable limits. This option was presented and approved.

During the site design process, Whitestone also was engaged to design an on-site septic system that had been specified by a third-party civil engineer. Whitestone noted that Code requirements would preclude the placement of the septic per the initial concept, and subsequent testing in the proposed disposal field locations encountered soils that would not comply with New York City on-site septic system requirements. However, geotechnical and hydrogeological analysis indicated that an on-site septic system would be feasible. Whitestone procured a meeting with NYCDEP's Commissioner and presented its findings, resulting in approval for the on-site sewage disposal system. The design and construction included two phases of installation and testing in order to phase the work around existing buildings and demolition schedules. Both rounds passed tests as witnessed by New York City engineering representatives.

Whitestone also provided environmental consulting services during the project to identify areas of environmental concern and coordinate asbestos abatement activities.

Whitestone provided construction phase testing and inspection throughout the foundation and earthwork portions of the project including specifically reviewing grades, identifying safe areas to stockpile materials so as not to induce unintended settlement, placement and installation of geofoam blocks, and pouring of concrete frost walls and structural mat.

Environmental and Geotechnical Services

MULTIPLE SITES

Northeast, Mid-Atlantic, Midwestern &
Southeastern United States

Client:

The Great A&P Tea Company, Inc.

Period of Performance:

1994 to Present
(Ongoing Indefinite Delivery Contract)

Project Highlights:

- Provide full range of environmental and geotechnical consulting and engineering services.
- Assessed, investigated and/or remediated 300+ sites to date.
- Provided due diligence investigations and site remediation services to assist with securing in excess of \$300M through a Sale-Lease-Back program involving more than 50 supermarket sites.
- Performed concurrent projects at dozens of sites in multiple states.

Environmental Services:

- Site Assessment & Inspection
- Sampling Plan Design & Implementation
- Soil, Sediment, and Groundwater Sampling
- Asbestos, Lead Paint, Indoor Air Quality & Mold Evaluation & Abatement
- Environmental Laboratory Analyses
- Environmental Reporting
- Remedial Design
- Remediation Management
- Regulatory Coordination & Reporting

Geotechnical Services:

- Geotechnical Boring Inspection
- Geotechnical Testing
- Geotechnical Reporting
- Geotechnical Design & Construction Recommendations
- Construction Phase Inspection & Testing



Project Description:

Whitestone conducts Phase I Environmental Site Assessments (ESAs), Phase II Site Investigations (SIs), Phase III Remedial Actions, and geotechnical studies at A&P retail store locations and warehouse/distribution facilities throughout the Northeast, Mid-Atlantic, Midwestern, and Southeastern United States under an Indefinite Delivery Contract.

Environmental Services. Whitestone has conducted hundreds of ESAs to fulfill corporate due diligence requirements for properties to be acquired/developed. In one instance, Whitestone completed expedited ESA services for eight New England sites in one week. As a follow-up to its Phase I ESA investigative efforts, Whitestone has addressed identified areas of environmental concern through soil, groundwater, and soil-gas contamination assessments. These assessments have included groundwater monitor well installation, sampling, and modeling; soil-gas surveys; and soil sampling and analyses. Whitestone also has designed and implemented dozens of asbestos, lead paint, air quality, and mold survey, abatement, and management programs.

Whitestone performed supplemental site evaluation and remediation management services in support of three Sale-Lease-Back programs worth more than \$300 million involving 50+ sites in multiple states. Remedial efforts at these sites included tank closure, contaminated soils excavation/off-site disposal, groundwater remediation system installation and monitoring, and site capping.

Geotechnical Services. Whitestone has conducted several hundred geotechnical investigations including thousands of borings and test pits with soil samples classified and analyzed for geotechnical parameters in Whitestone's in-house geotechnical laboratory. Whitestone also has designed foundations, pavements, floor slabs, and retaining walls and provided construction phase testing and inspection and pavement consulting and management services.

Sample Project. From 1998 to 2001, Whitestone conducted environmental and geotechnical due diligence investigations at a former ConEd coal gasification plant site that A&P was planning to lease and redevelop as new vehicle maintenance facility and truck/trailer parking area. The site adjoins the existing A&P/Shopwell Hunts Point Warehouse and Distribution Center on East Bay Avenue (Food Center Drive) in Hunts Point, Bronx, New York and is identified as the Site E Operating Unit in the Hunts Point Cooperative Redevelopment Plan. Whitestone's involvement in this project included a review of previous site investigation activities completed by others on behalf of A&P; recommendations for supplemental contaminant delineation and NYSDEC reporting; preparation of draft and final *Site Redevelopment Corrective Action Plans* for submittal by the New York City Economic Development Corporation (NYCEDC) to NYSDEC; geotechnical investigations (boring and test pit installation, laboratory testing, and reporting); and development of a site-specific *Health and Safety Plan for Intrusive Investigations and/or Earthwork Operations*. Whitestone worked closely with representatives from the NYCEDC and various other City and State environmental and public health agencies on this project.

City of Rahway Urban and Brownfield Redevelopment Projects

Multiple Locations
Rahway, Union County, NJ

Client:

Rahway Redevelopment Agency and
The City of Rahway, New Jersey

Contact:

Peter Pelissier, Executive Director
732-382-0009

Period of Performance:

1997 – Present

Project Highlights:

- Provide environmental investigation and corrective action services at City owned/controlled/foreclosed sites in support of urban redevelopment efforts.
- Prepare and implement NJDEP-Approved Remedial Investigation Workplans (RIWs).
- Prepare and oversee implementation of NJDEP-Approved Remedial Action Workplans (RAWs).
- Conduct pre-demolition asbestos, lead-based paint, and microbial surveys.
- Develop bid solicitation packages (Plans and Specifications) for remedial construction.
- Work with City officials and developers to obtain HDSRF and/or Brownfields reimbursement funding for investigation and remediation to accommodate redevelopment.



Hamilton Laundry Site (Before Redevelopment)

Project Descriptions:

Whitestone has been providing a full scope of environmental investigation and remediation services at municipal urban redevelopment sites in the City of Rahway for the past 13 years. Projects completed to date include:

- 40+ Preliminary Site Assessments,
- 30+ Phase II Site Investigations,
- Multiple asbestos and lead-based paint surveys and abatement actions; Brownfields Site remediations; UST/AST/OWS closures; and facility decontaminations/demolitions.

Lower Essex Street Redevelopment: Whitestone conducted Preliminary Assessment (PA), Site Investigation (SI), and Remedial Investigation (RI) activities at 18 underutilized, blighted commercial properties on Lower Essex Street along the Rahway River that were being redeveloped as a residential townhome complex and public park. Whitestone subsequently coordinated soil Remedial Action (RA) efforts and negotiated an engineering control/deed notice and groundwater monitoring and natural attenuation corrective action program with NJDEP. Whitestone also assisted the City in obtaining approximately \$2M in *Hazardous Discharge Site Remediation Fund* (HDSRF) and Green Acres funding from the State.

Timko-Kagan Properties Redevelopment: Historic on-site commercial operations included a laundrette, tailor, barber, grocery, electronics printing, a picture frame facility, a religious center, a plumber and residential use. Whitestone commenced SI/RI activities and managed/coordinated the necessary remedial actions in pursuit of the NFA determination from NJDEP. Whitestone also procured HDSRF grant monies from the State to cover the SI/RI. The site subsequently was redeveloped for mixed commercial/residential uses including a ground-floor restaurant with residential apartments above.

City of Rahway Urban and Brownfields Redevelopment Projects

Multiple Locations – Rahway, Union County, NJ

Client – Rahway Redevelopment Agency and The City of Rahway, New Jersey

Additional Project Descriptions:



Lower Essex Street (Before & After Redevelopment)

80 East Milton Avenue Redevelopment Project: Whitestone conducted PA/SI, RI, and soil and groundwater RA efforts at a former gasoline service station property that was redeveloped as a high-rise mixed use condominium, hotel, and retail structure with parking garage. Whitestone also assisted the City and the Redeveloper in obtaining \$1.3M in HDSRF grants and reimbursement pursuant to New Jersey's *Brownfield and Contaminated Site Remediation Act* (BCSRA).



Hamilton Laundry Redevelopment: Whitestone conducted a PA/SI and is currently performing RI activities at a former commercial laundry and dry cleaning facility and adjoining residential property. The proposed site redevelopment project includes a Performing Arts Center and Amphitheater with additional commercial components. Whitestone secured an initial \$500K in HDSRF grant funding from the State and has obtained Brownfield Development Area designation (October 2009) that will allow for additional RI and RA funding as the project progresses.

Warwick Laboratories Site Redevelopment: This former industrial facility manufactured, blended and distributed specialty lubricants and oils. After the business ceased operations, the City of Rahway foreclosed on the property and a subsequent fire destroyed the site building. Firefighting actions and building demolition exacerbated contaminant conditions. Whitestone took over RI activities from a prior consultant and subsequently procured additional HDSRF grants to cover supplemental investigation costs. In addition, Whitestone coordinated emergency response actions to address a release of elemental mercury. Whitestone also has pursued Brownfields reimbursement approval for the site redeveloper to recoup remediation expenditures pursuant to BCSRA.



80 East Milton Avenue (During & After Redevelopment)

Old City Library Site Redevelopment: Whitestone conducted asbestos and lead-based paint surveys on the old City library building. Whitestone subsequently developed a Bid Solicitation Package (Contract Drawings and Project Specifications) for asbestos abatement and building demolition. Whitestone also served as the Project Engineer during remedial construction.



City-Wide Underground Storage Tank Closure: Whitestone managed the closure/removal of underground storage tanks (USTs) at multiple City owned locations including City Hall, Fire House, Police Department, Public Library, Senior Center, and Art Museum. Projects included preparation of project specifications, contractor management/oversight, subsurface evaluation, and NJDEP reporting. On-going groundwater monitoring and NJDEP reporting continue at several sites, and other sites have received NFA determinations from NJDEP.

UST Closure and Remediation Projects

Multiple Locations, New Jersey

Client:

Multiple Clients throughout New Jersey

Period of Performance:

Summary of Select Projects through 2009

Project Highlights

- Whitestone has obtained No Further Action (NFA) designations from NJDEP for hundreds of sites in New Jersey.
- Conducted soil and groundwater investigations.
- Removed Underground Storage Tanks under NJDEP's former Cleanup Star and UHOT (Unregulated Heating Oil Tank) Programs.
- Oversaw excavation and proper off-site disposal of impacted soil. Performed subsurface evaluations in accordance with NJDEP's *Technical Requirements for Site Remediation*.
- Secured 75% remediation cost reimbursement for 15 sites through New Jersey's Brownfield and Contaminated Site Remediation Act (BCSRA)



Project Description:

Whitestone has designed, coordinated, and overseen remedial action efforts to obtain No Further Action (NFA) designations at hundreds of sites in New Jersey including the following representative projects:

Holmdel, New Jersey: This project included the removal of one 550 gallon heating oil UST that had leaked and impacted soil in the vicinity of the tank. Contaminated soil was excavated and transported off site for treatment/disposal, and a groundwater investigation was initiated per NJDEP *Technical Requirements for Site Remediation*. A groundwater monitor well was installed and sampled, documenting that groundwater conditions had not been impacted by the leaking UST. This information was submitted to NJDEP under the Cleanup Star program, and a NFA letter was received within one week of submittal.

Bridgeport, New Jersey: Several NJDEP spill cases had been reported for this site in association with diesel fuel overfills at a dispenser island associated with an operating trucking company. Whitestone collected surface and subsurface soil samples immediately surrounding the dispenser island and documented that soil conditions were not impacted by the surficial spills. This information was submitted to NJDEP under the Cleanup Star program, and a NFA letter was obtained within one week of submittal. Receipt of this NFA letter allowed Whitestone's client to receive funds that had been held in an escrow account from the sale of the property.

Basking Ridge, New Jersey: This project included the remediation of petroleum contaminated soils associated with the release from a 550 gallon residential heating oil UST. The UST had been removed from the subject property prior to Whitestone's involvement in the project as a condition of the sale of property. Upon documenting the petroleum release from the UST, Whitestone was retained to conduct the contaminated soil remediation and subsurface evaluation activities required in accordance with NJDEP *Technical Requirements for Site Remediation* in order to obtain an expedited NFA letter and allow the property transaction to occur. A NFA letter was received from NJDEP within two weeks of submittal of the appropriate remediation documentation, and the owner was able to close on the property as schedule.

Berkeley, New Jersey: This project included the removal of two 1,000 gallon unregulated heating oil USTs that were encountered during earthwork activities at this proposed retail development. Whitestone was retained to conduct UST closure and associated contaminated soil removal at the site as these USTs were located in an area preventing further grading activities at the property. Subsequent to completion of UST closure, contaminated soil excavation, and subsurface evaluation activities, a NFA letter was received from NJDEP within two weeks of report submittal. Receipt of the expedited NFA allowed earthwork activities to commence with minimal impact to the construction schedule.

Geotechnical Forensic Evaluation & Corrective Action Design

COSTCO WHOLESALE FACILITY
New Rochelle, New York

Client:

Costco Wholesale, Inc.

Period of Performance:

November 1999 to Present

Project Highlights

- Forensic geotechnical evaluation.
- Pile and anchor system construction to support 34 existing column foundations and correct settlement issues within an occupied retail warehouse facility.
- Work area isolation.
- Air quality monitoring.
- Environmental and safety controls.
- Contaminated spoils handling.
- Protection of underground methane gas venting and monitoring system.



Project Description:

The Costco Wholesale facility was constructed beginning in 1997 at the site of the former New Rochelle Municipal Incinerator facility. Both the interior and exterior of the building began to settle differentially after the site was filled to subgrade levels. Exterior settlement mainly affected pavement surface elevations and subsurface utility performance. Interior settlement adversely affected the structural integrity of portions of the floor slab and steel framing. By 1999, portions of the building had settled up to 45 inches creating safety hazards for both Costco employees and customers.

The building was built on a fill layer ranging in thickness from eight to 29 feet. The fill layer consisted of incinerated municipal trash that was placed on top of a natural peat and organic silt layer between circa 1915 and 1995. Contaminants of concern in the fill layer included metals, SVOCs, VOCs and PCBs.

The building and surrounding site settlement resulted from consolidation of the natural peat and organic silt layer which was induced predominantly by the weight of the redistributed fill and placement of imported new fill to bring the site to current grade. Preliminary efforts to mitigate the effects of differential settlement within the building included two replacements of 12,000 sf of floor slab and raising/replacing interior columns multiple times to re-level roof girders and joists to relieve excess stresses in the steel framing.

Whitestone's corrective action was designed to eliminate current and anticipated future structural distress and related safety concerns to the public and Costco employees and involved construction of a pile/anchor system to support column foundations in impacted portions of the warehouse building.

Approximately 85 piles and 34 bedrock anchors were installed to support 34 existing column foundations. Both the piles and anchors were drilled and grouted 6.5 feet into the underlying bedrock (located 55 feet to 80 feet below finished floor elevation in the area of the building supported by the piles). Because of suspected contamination in the old fill layer, pile drilling and spoil handling activities were conducted in accordance with a NYSDEC-approved Health and Safety Plan.

The building remained operational during Whitestone's investigations and corrective action. To protect the safety of the public and Costco employees, temporary barriers were erected around the work area to restrict access and air quality within and adjacent to the work area was monitored constantly for hydrogen sulfide, carbon monoxide, oxygen, and lower explosive limit. An existing underground methane gas venting and monitoring system also was protected and kept operational during corrective action.

Environmental Investigation, Remediation & Brownfield Redevelopment

ARBY'S RESTAURANT
Woodbury, New Jersey

Client:

Sybra, Inc.

Period of Performance:

October 1999 to August 2001

Project Highlights:

- Although NJDEP previously issued a No Further Action determination for the site, significant contamination was identified during Whitestone's due diligence efforts.
- Removal and off-site thermal processing and beneficial reuse of contaminated soil.
- 75% of remediation costs were reimbursed by the State of New Jersey through the *Brownfield and Contaminated Site Remediation Act*.



Project Description:

Sybra, Inc. (a franchisee of Arby's Restaurants) conducted initial due diligence efforts at the former Shiver's Fuel Company site to determine if redevelopment was an option. The site had operated as the Shiver's Fuel Company from 1929 through 1980. Remedial efforts were conducted by the former site owner and NJDEP issued a No Further Action determination in December 1996.

During Whitestone's 1999 due diligence efforts, soil and groundwater contamination was identified at concentrations exceeding NJDEP criteria, therefore, additional remedial actions were necessary during redevelopment efforts. Based on these findings, Sybra negotiated the purchase of the property and entered into a *Memorandum of Agreement* with NJDEP for the remediation of the property.

Based on proposed site grading and geotechnical considerations, approximately 2,700 tons of petroleum contaminated soil were transported for off-site thermal treatment and beneficial reuse. Subsequent to soil removal and construction of the restaurant and associated improvements, Whitestone installed groundwater monitor wells and conducted several rounds of groundwater monitoring to demonstrate the effectiveness of the remedial action.

The groundwater monitoring activities were conducted subsequent to the restaurant opening, and the No Further Action letter was received from NJDEP in late 2001 (approximately one year after the restaurant began operation).

Although Sybra budgeted for the remedial action prior to closing on the property and the restaurant opened on time and under budget, Whitestone prepared all the necessary documentation, attended meetings with the State of New Jersey, and negotiated a reimbursement of 75% of remediation costs through the *Brownfield and Contaminated Site Remediation Act* which resulted a reimbursement to Sybra of approximately \$114,000.00.

Geotechnical Investigation and Construction Phase Engineering

LAFARGE CEMENT IMPORT TERMINAL
Brooklyn, New York

Client:

Peter Scalamandre

Period of Performance:

July 2003 to April 2006

Project Highlights

- Value engineering to provide most economical foundation solutions resulting in the use of TaperTube high capacity piles.
- Axial, uplift, and lateral load tests per the New York City Building Code were conducted and supervised by Whitestone.
- Construction oversight of pile driving operation, reinforcing steel rebar installation, and concrete pour operation.
- Vibration monitoring during pile driving operation was provided.



Project Description:

Development of the Lafarge Cement Import Terminal Facility consisted of the construction of four, 17,000 metric ton capacity concrete silos and a truck load out facility. The concrete silos were supported on a structural steel frame system on a thick concrete mat foundation supported on TaperTube Piles.

The project site is located on a bulkhead in the New York Bay in Brooklyn, New York. The subsurface conditions in combination with high lateral wind loads, seismic loads, and axial loads made the design of the piles a challenging geotechnical engineering task. In addition, an existing wood lagging bulkhead bordered the site to the north. The wood lagging system was scheduled to remain.

The subsurface conditions at the site consisted of historical fill underlain by alluvial organic soil deposits associated with the nearby New York Bay. Underlying the organic alluvial deposits, alternating layers of alluvial sand and clay deposits extended to an approximate depth of 100 feet below the surface.

The initial foundation system was proposed to consist of eight pile caps supporting each of the concrete silos. As such, Whitestone recommended the use of H-piles to support the structures. As the project design progressed, the use of a pile-supported mat foundation system was found to be more economical. High capacity TaperTube piles then were recommended and ultimately used at the site.

Some 128 TaperTube piles were successfully driven at the site. Vibrations induced during driving were found to be of low intensity, and did not cause damage to the existing bulkhead. The use of the TaperTube piles ensured ease and speed of construction schedule and reduced the required number of piles.

Whitestone's services included the following value engineering and geotechnical consulting services:

- recommendations for deep foundation systems consisting of TaperTube piles including recommendations for pile axial capacity, lateral capacity under wind and seismic loads and uplift capacity;
- modeling the entire concrete mat/pile system as one unit to ensure adequacy of design; and
- construction phase testing and inspection services including oversight of axial and lateral pile load test per New York City Building Codes, pile drilling operations, steel reinforcement and concrete pour inspections for foundation elements, pavement construction and structural steel connections.

Environmental Remediation & Brownfield Redevelopment

SAFEGUARD STORAGE FACILITY
Philadelphia, Pennsylvania

Client:

Safeguard Storage Facilities

Period of Performance:

March 2003 to December 2003

Project Highlights

- Developed site-specific standards through Pennsylvania's Act 2 Program.
- Implemented engineering and institutional controls in lieu of more costly active remediation.
- Proposed redevelopment improvements acted as the engineering controls (Cap) limiting remediation costs.



Project Description:

Contaminated urban fill typical of inner-city sites was identified at the proposed Safeguard Storage redevelopment project during Whitestone's due diligence efforts. Based on these findings, Whitestone developed a corrective action program in conjunction with Safeguard Storage Properties and the Pennsylvania Department of Environmental Protection (PADEP) through Pennsylvania's Act 2 Voluntary Cleanup Program. This corrective action program utilized the proposed redevelopment improvements to act as engineering controls (a Cap) to eliminate potential contact with the contaminated fill material.

Whitestone also evaluated site hydrogeologic conditions and determined that the fill was not impacting groundwater, therefore, a site-specific standard was developed for site soils, and PADEP agreed that the site could be redeveloped with the implementation of engineering controls (Cap) and institutional controls (Deed Acknowledgment).

Regulatory approvals were obtained prior to property closing, and upon approval of the proposed corrective actions, the storage facility was constructed on site. Supplemental reporting including documentation of the constructed cap was submitted to PADEP subsequent to construction.

Sinkhole Remediation and Geotechnical Consulting

McDONALD'S RESTAURANT
Wyomissing, Pennsylvania

Client:

McDonald's USA, LLC

Period of Performance:

November 2000 to December 2000
and November 2003

Project Highlights

- Found 23 feet wide caverns below McDonald's restaurant that was already under construction.
- Reviewed lease agreement and developer's geotechnical information and found conditions had not been improved per design engineer's requirements.
- Mobilized specialty grouting contractor and remediated sink hole conditions within two-week period before grand opening, enabling restaurant to open safely and on schedule.



Project Description:

Many of Whitestone's corporate clients occupy properties through lease or obtain "pad sites" that are developed as part of a larger overall develop for which geotechnical engineering studies have been completed by others. Whitestone works with their clients as a consultant to assist them with ensuring that the client's geotechnical and environmental interests are being protected.

When McDonald's USA, LLC decided to build a restaurant on an outparcel in a larger retail development in Wyomissing, Pennsylvania, a geotechnical exploration prepared by others had found extremely soft limestone rock with frequent voids and caverns which were susceptible to sinkhole formation. To mitigate these conditions, the developer's geotechnical engineer had specified a subsurface proofdrilling and grouting program to fill voids and seal problematic caverns and enable safe building construction. While this procedure was put into effect underneath a portion of the site, Whitestone's review indicated that the procedure had not been completed under the McDonald's outparcel. Independent test explorations conducted by Whitestone confirmed voids beginning as shallow as seven feet below the recently constructed McDonald's building (only four feet below the respective foundation) and extending (in some areas) deeper than 23 feet. The voids also were confirmed to be interconnected in a network of sizeable caves. A grand opening event was scheduled for two weeks from the date on which McDonald's decided to independently complete the remediation work.

Whitestone contacted the president of a leading subsurface grouting and remediation firm that have been working on state transportation projects in the area and was able to prepare bid documents, work specifications, and contract requirements on behalf of McDonald's and convinced the firm to mobilize immediately. A Whitestone engineer directed the subsurface proofdrilling and grouting program (including working around numerous existing utilities and other trades attempting to complete finish work during the two-week period). The crews swept and washed the parking lot as they demobilized four hours prior to the grand opening event, which was a success.

Whitestone was retained to provide additional supplemental expert reports pertained to the matter to assist McDonald's efforts to recoup costs associated with the earthwork improvements from the landlord/developer.

Wastewater Management Planning

COMMERCIAL REDEVELOPMENT
Franklin Township, Somerset County, NJ

Client:

Walgreen Company

Period of Performance:

January 2006 to Present

Project Highlights

- Providing engineering and consulting services for a commercial redevelopment site impacted by adoption of recent Water Quality Management rule changes.
- Evaluated existing on-site septic system to determine if reconstruction was feasible to support proposed redevelopment.
- Recommended abandonment of existing on-site septic system and connection to public sanitary sewer.
- Working with Township, County, and NJDEP officials to ensure that the site is included in the sewer service area of the new Somerset County WMP.
- Will oversee construction of a sanitary pump station and force main upon adoption of the Somerset County WMP



Project Description:

The client plans to demolish existing site structures at a commercial property to facilitate construction of a new, 14,738 square foot Walgreens pharmacy. Whitestone has been retained to determine the most appropriate means of wastewater disposal for the proposed redevelopment and address wastewater management plan consistency requirements compliant with N.J.A.C. 7:15.

Whitestone's initial evaluation of the site's poorly operating septic system determined that reconstruction would be necessary. A subsequent soils investigation identified unfavorable subsurface conditions not conducive to long term, successful septic system operation. As a result, Whitestone proposed abandonment of the existing on-site sewage disposal system and connection to the public sanitary sewer.

In order to connect to the public sanitary sewer, the receiving sewage treatment plant must have capacity, and the property must be designated for sewer service in the appropriate Water Quality Management Plan (WQMP) and Wastewater Management Plan (WMP).

The site was initially located within the regional Lower Raritan Middlesex WQMP area, which is under the management of the Middlesex County Board of Chosen Freeholders (MCBCF). As such, Whitestone prepared and submitted a WQMP Amendment to MCBCF and NJDEP requesting modification to the site's sewer service designation.

Rule changes to N.J.A.C.7:15 that became effective July 7, 2008 transferred WMP responsibility from MCBCF to the Somerset County Board of Chosen Freeholders and prevented completion of the original WQMP Amendment process. Whitestone contacted involved officials and subsequently provided project documentation to Somerset County and Franklin Township requesting that the site be included in the sewer service area of the new county-wide WMP. Recent communication with NJDEP indicates that connection to the sewer system will be allowed upon adoption of the new Somerset County WMP.

Once the proposed sanitary sewer connection has been approved, Whitestone will provide construction phase inspection and testing services for a sanitary pump station and approximately 2,700 linear feet long force main.

Sanitary Wastewater Treatment System Design, Permitting and Construction Supervision

GEMINI INDUSTRIES SITE
Roxbury Township, NJ

Client:

The Hampshire Companies

Period of Performance:

2003 to 2007

Project Highlights

- Evaluated existing on-site septic system to determine what upgrades were needed to accommodate a planned facility expansion.
- Designed an increased capacity primary treatment system and expanded discharge to groundwater disposal bed area.
- Collected required site soil, geologic, and water quality information for the NJPDES-DGW Individual Permit Application.
- Secured NJPDES and TWA permits.
- Supervised construction of an 11,565 gpd wastewater treatment and discharge system.



Project Description:

A planned facility expansion at the subject property necessitated redesign of this industrial site's existing sewage disposal system (which was sized to receive 5,000 gallons of sewage per day from a manufacturing facility with 333 on-site employees). The proposed expansion increased the facility to 600,000 square feet and doubled the total number of on-site employees. Whitestone was retained to design and permit a new sanitary wastewater treatment system to accommodate the increased sewage discharge flow resulting from facility expansion.

Whitestone collected and prepared the required technical data for a New Jersey Pollution Discharge Elimination System (NJPDES) Discharge to Groundwater (DGW) Individual Permit Application. Test pits, soil borings, and monitoring wells were installed to depths of 70 feet in the proposed on-site disposal area to:

- determine depth to bedrock;
- characterize site soils;
- identify restrictive horizons;
- collect soil samples for grain-size analyses in Whitestone's geotechnical laboratory;
- confirm depth to groundwater and seasonal high groundwater levels;
- determine the permeability and hydraulic conductivity of the area's substrata;
- identify the direction of groundwater flow; and
- characterize ambient groundwater quality.

Parameters calculated from the obtained data included transmissivity, hydraulic gradient, Long Term Acceptance Rate (LTAR), and a groundwater mounding analysis. Whitestone's engineers used these data to design the new wastewater treatment system and prepare the NJPDES-DGW and Treatment Works Approval (TWA) permit applications. Whitestone also prepared and obtained a Watershed Quality Management Plan amendment from Roxbury Township for the increased discharge volume.

The expanded wastewater treatment system more than doubled the site's daily sewage treatment capacity and included the addition of four additional disposal beds for a total disposal area of 28,000 square feet. The new system consisted of:

- a series of septic tanks to provide primary treatment;
- an aerobic treatment tank;
- denitrification process equipment;
- an equalization tank;
- a pump tank and delivery pump; and
- discharge to groundwater through alternating dosing disposal beds.

Upon securing the required permits and approvals, Whitestone supervised construction of the new 11,565 gpd sanitary wastewater treatment system. The system is operating as designed in compliance with the NJPDES-DGW permit.

Environmental, Geotechnical, & Construction Phase Engineering Services

SELF-STORAGE FACILITY SITE
Brooklyn, Kings County, NY

Client:

Acadia Realty Trust

Period of Performance:

2006 to 2009

Project Highlights

Geotechnical

- Soil boring installation up to 102 fbgs.
- Pre- and post-construction surveys at nearby residential structures.
- Vibration monitoring.
- Construction inspection and testing.
- Report preparation.
- Design recommendations for foundations, pavement support, and GW control.

Environmental

- Phase I ESAs, Asbestos Surveys, and Phase II/Remedial Investigations
- Geoprobe boring and monitoring well installation
- UST, OWS, and hydraulic lift removal
- Preparation of UST Closure Report and Corrective Action Workplan
- Design and Inspection of a Vapor Barrier Mitigation System
- Characterization and beneficial re-use of clean fill
- On-site remediation management during excavation



Project Description:

Whitestone originally was retained by Post Management, LLC to perform environmental and geotechnical due diligence investigations of a proposed self-storage facility site located at 3317 Atlantic Avenue in Brooklyn, Kings County, New York. Acadia Realty Trust took control of the project in June 2006 and ordered Whitestone to conduct a follow-up investigation prior to site re-development. The site development plan included partial demolition and modification of an existing site building and construction of an approximately 20,491 square feet, four-story facility with a two-level cellar, associated pavement, and utilities.

Whitestone's subsurface exploration included the installation of 12 soil test borings, groundwater level observations, and soil sample collection for analyses. The borings were drilled to depths ranging between 50 and 102 feet below ground surface (fbgs) using hollow stem augers and driven casing with mud rotary techniques. Data from the exploration were analyzed by Whitestone's geotechnical engineers who presented recommendations for foundation design (structural foundation mat bearing on approved glacial deposits and/or structural fill materials); pavement support (including potential subgrade stabilization); and groundwater control (dewatering during construction).

Whitestone's geotechnical staff performed pre-construction surveys to document the physical condition of accessible portions of residences located within 100 feet of the cellar portion of the proposed self-storage building. Residential exteriors, garages, and basements were inspected and crack monitors installed as permitted by the property owners. A comprehensive written and photographic record of the survey efforts was prepared to fully document the existing condition of surrounding structures prior to construction.

Vibrations generated by demolition and pile driving operations were monitored by Whitestone personnel using seismographs positioned between the site and nearby residential structures and near an active underground subway track associated with the Long Island Railroad (LIRR). Results were recorded in histogram format and evaluated using action limits established by the U.S. Bureau of Mines.

Whitestone initially conducted Phase I ESAs, asbestos surveys, and Phase II/ Remedial Investigations to evaluate environmental conditions at the site and establish budgetary cost estimates. Whitestone's environmental staff subsequently managed and coordinated the closure of 13 USTs ranging in size from 550 to 17,000 gallons, one oil/water separator (OWS), and two hydraulic lifts. Whitestone also managed the characterization and off-site disposal of clean sand, petroleum impacted soil, and historic fill in conjunction with the site redevelopment. Soil samples were collected to confirm that petroleum impacted soil was successfully excavated. A Closure Report was prepared to document these activities as well as the installation of a vapor mitigation system designed by Whitestone.

Whitestone also designed and implemented a groundwater monitoring plan which included installation of nine monitor wells to evaluate dissolved-phase petroleum contamination and free product associated with historic site operations. A Corrective Action Workplan was based on the investigation results.