

**LANGAN'S PHARMACEUTICAL CAMPUS AND CHEMICAL  
MANUFACTURING EXPERIENCE**

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## PURACAP PHARMACEUTICALS - PHASE I/II ESA & COMPLIANCE EVALUATION

Location: Jamaica, NY  
Client: Puracap Pharmaceuticals, LLC  
Services: Environmental, Environmental Compliance

### OVERVIEW

Langan completed a Phase I Environmental Site Assessment and Limited Environmental Compliance review for Puracap Pharmaceuticals, LLC on a fast-track due diligence time period in response to a real estate transaction. The site consisted of a 180,000 SF pharmaceutical manufacturing facility located in Jamaica, New York. Three recognized environmental conditions (RECs) were identified by Langan during the Phase I ESA and further investigated during expedited Phase II ESA activities which included a geophysical survey and soil, soil vapor, and groundwater sampling.

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## JOHNSON & JOHNSON HUMAN PERFORMANCE INSTITUTE

Location: Orlando, FL

Architect: Gensler

Services: Site/Civil

### OVERVIEW

Langan provided site/civil engineering services for the new global headquarters for Johnson & Johnson Human Performance Institute. Located in Lake Nona Medical City, the state-of-the-art building is LEED-certified and spans over 35,000 SF.

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## PFIZER VILLAGE GREEN

Location: Pearl River, NY  
Client: Pfizer Global Operations  
Services: Landscape Architecture, Site/Civil, Surveying/Geospatial

### OVERVIEW

Langan supported Pfizer's efforts to revitalize their Pearl River Campus's Village Green between Buildings 200 and 222. Langan designed the new walkways and gathering areas to replace aging and deteriorating pavements surrounding the Village Green. The project consisted of the replacement of 14,000 SF of decorative pavement with complimenting improvements to outdoor seating, lighting and landscaping.

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## COLGATE-PALMOLIVE PLANT DEMOLITION

Location: Mexico City, Mexico  
Client: Colgate-Palmolive  
Services: Demolition, Site/Civil

### OVERVIEW

The Colgate-Palmolive Plant site encompasses approximately 6.5 hectares and contains 18 interconnected buildings, varying from one to six stories in height and totaling 1,325,000 square feet. The site also includes tank farms, silos, a wastewater plant, a 30-meter smokestack, an elevated water tank, and an abandoned rail line. Langan provided site observation and recommendations to improve the demolition efficiency and operations, specifically during the building and smokestack demolition.

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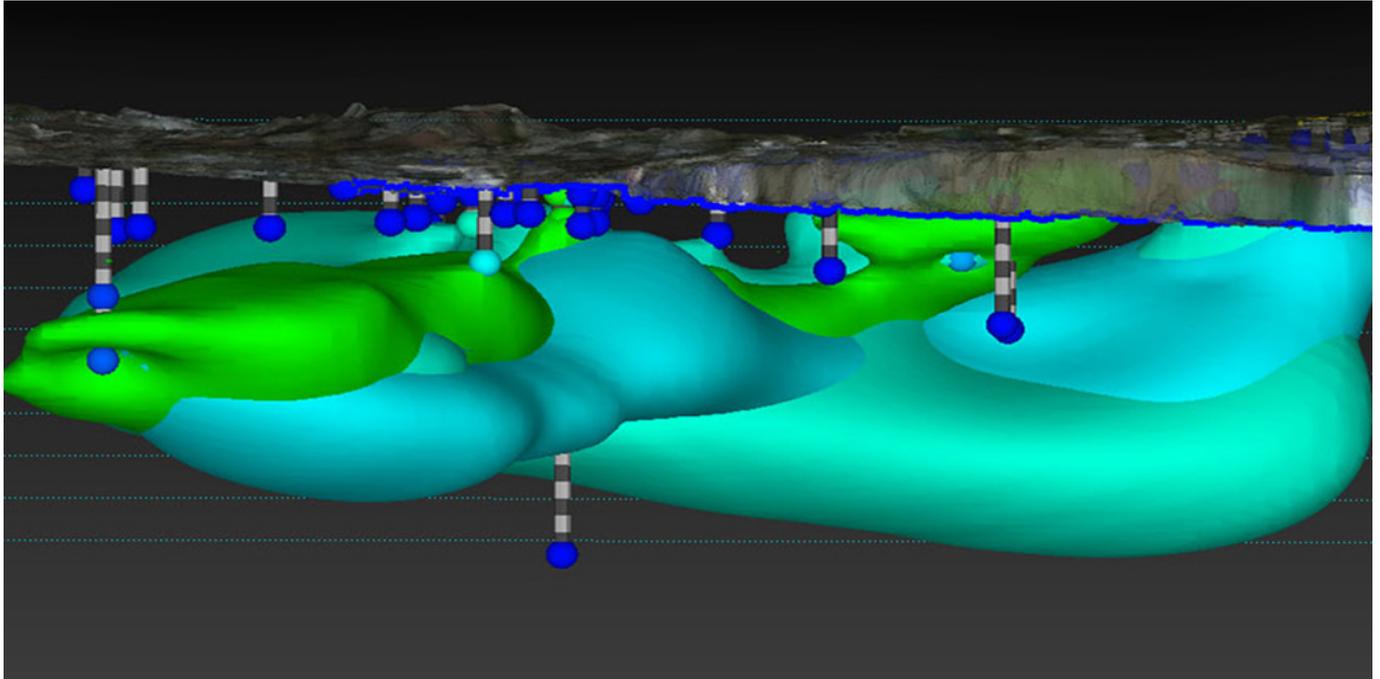
## MANNINGTON MILLS

Location: Salem, NJ  
Client: Mannington Mills, Inc.  
Services: Natural Resources & Permitting, Environmental, Landscape  
Architecture

### OVERVIEW

This project involved the mitigation and restoration of over nine acres of wetland and upland areas as a requirement of an EPA dictated clean-up action. The final design featured a freshwater forested wetland; two areas of tidal emergent wetland; a stormwater wetland; and a restored meadow/old field habitat in upland areas over capped environmental waste. Successful permitting and design of this site required close cooperation between landscape architects, natural resources/permitting staff, and environmental engineers from the initial design phase through the completion of construction.

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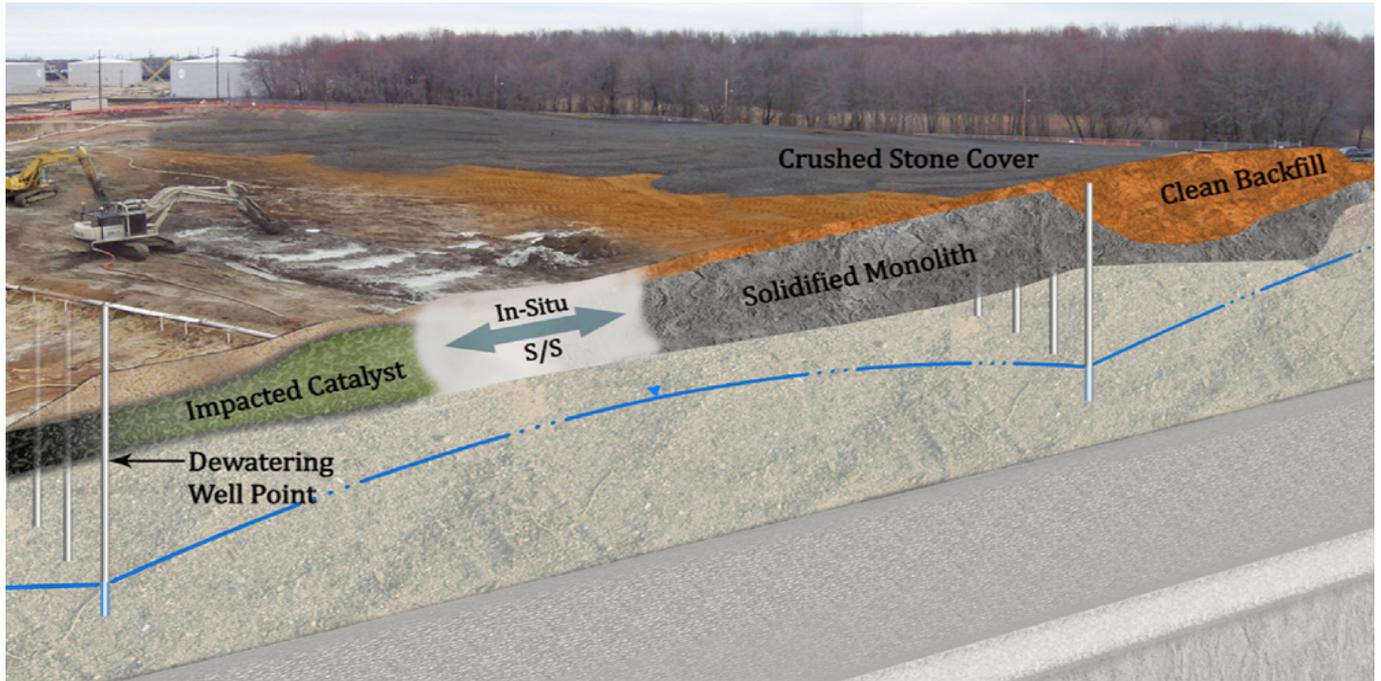
## 3D VISUALIZATION OF COMINGLED CHLORINATED SOLVENT PLUMES

Location: Confidential Site, NJ  
Client: Confidential  
Services: Data Solutions

### OVERVIEW

Langan provided 3D visualization analysis of the hydrogeologic framework and contaminant transport at a former industrial facility in New Jersey. The site was characterized by a large and dilute chlorinated solvent plume that has migrated 5,300 feet within a fractured bedrock aquifer. Multiple off-site sources also contributed dissolved solvents to the comingled plume. Environmental Visualization Studio (EVS) software was utilized in order to gain a better understanding of contaminant transport in the fractured and faulted bedrock aquifer. EVS software uses advanced gridding and geostatistical analysis to create 3D models of geologic setting and analyte spatial data.

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## IN-SITU SOLIDIFICATION/STABILIZATION POND CLOSURE

Location: New Jersey  
Client: Confidential  
Services: Environmental

### OVERVIEW

Langan's creative remediation approach to clean up the 760-acre site along the Delaware River included implementation of in-situ stabilization/solidification (S/S). This innovative solution ultimately saved the client nearly \$6 million over more conventional forms of remediation.

### AWARDS

2009 American Council of Engineering Companies, Engineering Excellence Award

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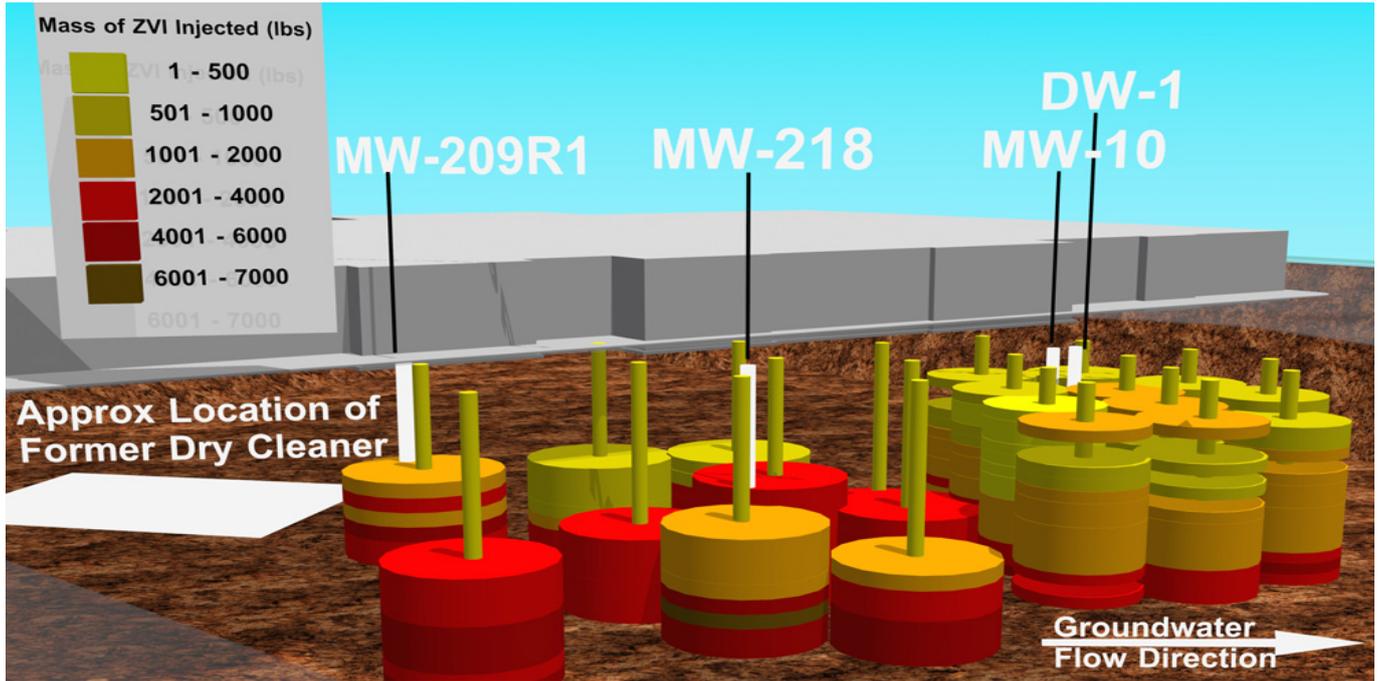
## LNAPL REMEDIATION

Location: Southeastern United States  
Client: Confidential  
Services: Environmental

### OVERVIEW

Langan developed a broad-scale management program to address light non-aqueous phase liquid (LNAPL) over a 70-acre area at a major asphalt refinery. The program was based on developing an LNAPL conceptual site model and evaluating applicable remedial technologies. Langan conducted LNAPL recoverability testing and pilot-scale testing to quantify recoverability and define remedial design parameters. Langan developed a focused LNAPL remediation approach for the entire site and proposed a suite of technologies from less aggressive (LNAPL skimming and periodic vacuum truck extraction) to more aggressive (multi-phase extraction) to allow for a phased and streamlined, yet flexible, program.

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## PNEUMATIC FRACTURING & INJECTION OF ZERO-VALENT IRON

Location: Randallstown, MD

### OVERVIEW

This project was implemented as part of a commercial brownfields redevelopment in Maryland. The 19-acre shopping center is impacted, primarily with tetrachloroethene (PCE), from former dry cleaning operations at concentrations up to 41,400  $\mu\text{g/L}$  in the source area, with the majority of the mass in the saprolite and overlying partially weathered bedrock at depths from approximately 55 to 80 feet below ground surface (bgs). Due to the tight geologic formation, pneumatic fracturing and slurry injection of micro-scale zero-valent iron (ZVI) was selected as the full-scale remedial strategy. Pneumatic fracturing created an interconnected fracture network for ZVI delivery in a dense formation that would have typically yielded very low conventional injection flow rates. As ZVI corrodes in the subsurface, it creates strongly reducing conditions in the aquifer to promote both abiotic and biological degradation of PCE and its daughter products.

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## VERIZON PENNSYLVANIA, LLC - AIR QUALITY PERMITTING AND COMPLIANCE

Location: Pennsylvania  
Client: Verizon Pennsylvania, LLC  
Services: Environmental Compliance

### OVERVIEW

Verizon Pennsylvania LLC operates emergency diesel generators in central offices throughout Pennsylvania to maintain service in the event of a power interruption. Langan was retained by Verizon to investigate air quality permit requirements for emergency generators and boilers at over 350 facilities in Pennsylvania.

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Credit: Bruner/Cott & Associates, Inc.

## SWIFT FACTORY

Location: Hartford, CT  
Client: Bruner/Cott & Associates, Inc.  
Architect: Bruner/Cott & Associates, Inc.  
Partner: Community Solutions  
Services: Site/Civil

### OVERVIEW

The Swift Factory complex served as the economic engine of the Northeast Hartford community for more than 100 years before its closure in 2005. The historic, industrial brownfield site contains the former M. Swift and Sons factory, the historical manufacturers of gold leaf and other pressed metals, as well as two homes on a site totaling 2.6 acres. Community Solutions is re-purposing the facility into a multi-purpose community hub to improve health and create jobs for the neighborhood residents. Langan provided engineering services including site, grading, utilities, and drainage design. We performed the site design around the constraints of renovating an existing building.

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## KEYSTONE INDUSTRIAL PORT COMPLEX

Location: Fairless Hills, PA  
Client: Multiple Alternative Energy Clients  
Services: Environmental

### OVERVIEW

Langan has been providing strategic environmental and integrated land development engineering services for the redevelopment of the 2,500-acre former Fairless Works Complex, to accomplish the mutual goals of US Steel and a variety of alternative energy companies. All site challenges relating to environmental conditions, former structures, slag fill, and the natural resources issues of a major riverfront location have been addressed in accord with PA Act 2, One Cleanup, and other relevant state regulatory programs.

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NEW JERSEY NEW YORK CONNECTICUT MASSACHUSETTS PENNSYLVANIA OHIO VIRGINIA FLORIDA TEXAS ARIZONA COLORADO  
WASHINGTON CALIFORNIA ATHENS CALGARY DUBAI LONDON PANAMA