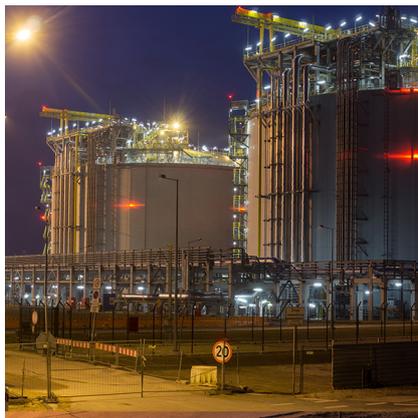


LANGAN'S ENERGY INFRASTRUCTURE DESIGN AND PERMITTING



Technical Excellence Practical Experience Client Responsiveness



LNG PEAK SHAVING FACILITY, NEW JERSEY

Location: New Jersey
Client: Confidential
Services: Environmental Compliance, Environmental, Site/Civil,
Geotechnical, Traffic & Transportation, Surveying/Geospatial

OVERVIEW

This LNG peak-shaving facility will consist of a large LNG tank, vaporizer system, truck loading and unloading rack, and other associated facilities. Located on a brownfield site in an industrial setting, the facility site has a history of waste management and is challenged by nearby wetlands and streams. Langan's civil, environmental and traffic engineering groups are working together to support property assessment, optimal facility layout and facility permitting.

Technical Excellence Practical Experience Client Responsiveness



LNG PEAK SHAVING FACILITY, PENNSYLVANIA

Location: Pennsylvania
Client: UGI Energy Services, Inc.
Services: Site/Civil, Environmental, Traffic & Transportation,
Surveying/Geospatial, Geotechnical

OVERVIEW

This LNG peak-shaving facility will consist of a 2-million-gallon LNG tank, vaporizer system, truck loading and unloading rack and other associated facilities. The facility is located in a greenway area that includes a variety of environmental constraints including wetlands, floodplains and steep slopes. Langan's multidiscipline service groups are working together to support various tasks including property assessment, facility planning, detailed facility layout, and land development permitting.

Technical Excellence Practical Experience Client Responsiveness



LNG PEAK SHAVING FACILITY, NEW ENGLAND

Location: New England
Client: Confidential Client
Services: Site/Civil, Environmental, Geotechnical, Traffic & Transportation, Surveying/Geospatial

OVERVIEW

This LNG peak-shaving facility will consist of a large LNG tank, vaporizer system, truck loading and unloading rack and other associated facilities. The facility is located in a rural, ridge top area. Langan's civil and environmental teams prepared facility layout and land development concepts to site the facility in the optimal location based on development constraints, including steep sloping terrain, the presence of streams and wetlands, and the need to maintain access to other areas of the property. Langan's environmental team also completed a preliminary impact study and environmental assessment.

Technical Excellence Practical Experience Client Responsiveness



CONFIDENTIAL REFINERY MODERNIZATION PROJECT

Location: Peru
Client: Confidential
Services: Geotechnical, Earthquake/Seismic

OVERVIEW

The multi-billion dollar modernization effort involves fast-tracked geotechnical and seismic engineering studies for the modernization of this large refinery located on the Pacific coast. The ground motions and tsunami microzonation studies performed by Langan and our subconsultant were consistent with the definitions of the levels of earthquake 'shaking' in the Peruvian code. The team performed both probabilistic seismic hazard analysis (PSHA) and deterministic analysis to develop the spectral acceleration estimates and tsunami wave runups required as part of the microzonation study. Langan performed an extensive two phased geotechnical study consisting of more than 100 test borings to 30-meter deep and 100 25-meter deep cone penetrometer tests. An array of geophysical testing was also performed to complement the borings and evaluate the subsurface conditions.

Technical Excellence Practical Experience Client Responsiveness



PHILLIPS 66 TREMLEY POINT FACILITY EXPANSION

OVERVIEW

Technical Excellence Practical Experience Client Responsiveness

NEW JERSEY NEW YORK CONNECTICUT PENNSYLVANIA OHIO VIRGINIA GEORGIA FLORIDA TEXAS CALIFORNIA ARIZONA WEST VIRGINIA
ABU DHABI DUBAI GREECE LONDON QATAR TURKEY PANAMA



TRANSFER FACILITY - NEW STORMWATER OUTFALL

Location: New Jersey
Client: Confidential
Services: Geotechnical, Site/Civil, Surveying/Geospatial

OVERVIEW

Our client is transforming a former oil refinery into a liquid product transfer facility, which is undergoing renovation and reconfiguration and requires a new direct discharge line to be installed. Langan is assisting the client with the field investigation for the installation of a new stormwater outfall line from the waste water treatment facility. Our team performed a thorough underground utility survey to clear the way and adjust the alignment of the new 1,900-FT-long outfall pipe. We utilized a specialty utility locating and mark-out contractor to perform this task under our direct full-time supervision, and performed a focused topographic and utility survey of the outfall alignment area to confirm and supplement the available survey information. Langan also assisted the outfall designer in selecting a suitable alignment for the outfall pipe, performed a geotechnical field investigation for the outfall alignment and the discharge headwall, and provided deep foundation recommendations for their support.

Technical Excellence Practical Experience Client Responsiveness



NATURAL GAS PRODUCTION FACILITIES

Location: Multiple Locations in PA and WV
Client: Confidential
Services: Site/Civil, Geotechnical, Natural Resources & Permitting,
Traditional Surveying

OVERVIEW

Langan provides integrated site/civil, natural and cultural resource, environmental, geotechnical, and survey services for major natural gas producers with production, gathering, and transmission facilities throughout Pennsylvania and West Virginia. Specific services include erosion and sediment design/permitting, wetland and waterway survey and permitting, threatened and endangered species conflict resolution, pre-drill water testing, well plat surveying, and geotechnical design for pipeline crossings.

Technical Excellence Practical Experience Client Responsiveness



MULTIPLE MARCELLUS SHALE GAS PRODUCTION WELL PADS

Location: West Virginia
Client: EQT Production Company, Seneca Resources Corporation, EXCO Resources, Mountaineer Keystone
Services: Site/Civil, Geotechnical, Natural Resources & Permitting, Traffic & Transportation, Traditional Surveying

OVERVIEW

Langan successfully designed and permitted multiple natural gas production well pad sites located throughout West Virginia. We provided the following integrated services at these pad sites: natural resource survey and permitting for wetlands waterways, threatened and endangered species impact resolutions, civil design and erosion and sediment control permitting, geotechnical investigation and design, environmental water quality (pre-drill) investigations, well plat preparation, site survey, and transportation design and permitting.

Technical Excellence Practical Experience Client Responsiveness



NATURAL GAS PRODUCTION WELL SITE

Location: Amwell Township, Washington County, PA
Client: Confidential
Services: Site/Civil, Natural Resources & Permitting, Data Solutions

OVERVIEW

Langan designed and permitted this natural gas production facility which consisted of a permanent access road, production well pad, aboveground storage tank pad and a freshwater impoundment.

Technical Excellence Practical Experience Client Responsiveness



MARINER WEST PIPELINE CONSTRUCTION

Location: Beaver County, PA
Client: Sunoco Logistics (SXL)
Services: Site/Civil, Geotechnical, Traditional Surveying

OVERVIEW

Langan provided site/civil and geotechnical engineering design and construction services for a 4.4-mile section of an ethane pipeline. This section is located between the north and south shores of the Ohio River near Vanport Station. Langan provided services for horizontal directional drilling (HDD) design and conventional installation as well as for the construction of the pipeline and several access roads. Langan also provided boundary surveys of all properties that will contain the pipeline right-of-way.

Technical Excellence Practical Experience Client Responsiveness



GATHERING & TRANSMISSION PIPELINES

Location: Multiple Locations
Client: Confidential
Services: Natural Resources & Permitting, Geotechnical, Traditional Surveying

OVERVIEW

Langan's integrated services aid clients in the successful design and permitting of gathering and transmission pipelines. Langan provides boundary surveys along pipeline routes and survey stakeouts of each route's limits and centerline. Langan's environmental team also provides wetland/stream delineation for the pipeline routes and submits permit applications for the U.S. Department of Environmental Protection's approval. Langan's geotechnical team performs extensive testing of subsurface conditions along routes.

Technical Excellence Practical Experience Client Responsiveness

NEW JERSEY NEW YORK CONNECTICUT PENNSYLVANIA OHIO VIRGINIA GEORGIA FLORIDA TEXAS CALIFORNIA ARIZONA WEST VIRGINIA
ABU DHABI DUBAI GREECE LONDON QATAR TURKEY PANAMA



GAS COMPRESSOR STATIONS

Location: Multiple Locations
Client: Confidential
Services: Site/Civil, Geotechnical, Natural Resources & Permitting,
Environmental Compliance

OVERVIEW

Langan provides integrated services to multiple clients for compressor station sites. As a part of assessing site feasibility, the Langan team provides site layout and grading analyses along with stream and wetland delineations. After site selection, final construction documents are prepared by Langan including site layout, grading and drainage design, erosion and sediment control, and stormwater management design. Additionally, our geotechnical team evaluates subsurface conditions and our transportation team permits driveways and access roads. Langan also obtains air quality permits and other environmental compliance permits.

Technical Excellence Practical Experience Client Responsiveness