



TOWN OF NORTH CASTLE

WATER & SEWER DEPARTMENT

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Member

American Water Works Association

N.Y. Rural Water Association

N.Y. Water Environment Association

Westchester Water Works Conference

Sal Misiti
Director of Water & Sewer Operations
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MEMORANDUM

To: Kevin Hay, Town Administrator

From: Sal Misiti

Date: December 8, 2022

Cc: Roland Baroni, Jr., Town Attorney

Re: **Amendment of agreement, Consulting Services with Langan Engineers
For services in WD2 related to Windmill Wells- PFOA treatment**

We have an agreement with Langan Engineering for a Health Department corrective action plan related to PFOA detections in Water District No.2 wells. The corrective action plan was submitted to Westchester County Health Department earlier this year (3/2/22) within the imposed deadline timeframe. The action plan has recently been acknowledged by the Health Department (11/1/22) as acceptable methods for PFOA treatment.

At this point we need to move to the next step in this process which is design and implementation of required treatment. There is an additional step required by the Health Department prior to design approvals, they require a full pilot study. The pilot study consists of a mini plant so to speak, utilizing the prescribed treatment with proportionate flow from the wells with detections to track the effects of the process. In the interest of time, while the pilot is functioning, Langan will work on the design of the final treatment process.

I respectfully request that the Town Board consider approval of the Langan proposal as an amendment to our current agreement for the services as required.

If you should have any questions or require any additional information, please give me a call.

Attachment

December 2, 2022
Revised: December 20, 2022

Mr. Kevin Hay
Town Administrator
Town of North Castle
15 Bedford Road
Armonk, NY 10504

**Re: Proposal for PFAS Treatment Pilot Test and
Full Scale Design Services
Town of North Castle Public Water Supply Water District 2
North Castle, NY 10504
Langan Project No.: 190073501**

Dear Mr. Hay:

We are pleased to present this proposal for environmental engineering services for the Town of North Castle, Westchester County, New York. Our scope of services includes the implementation of a pilot-scale potable water treatment study for the removal of per- and polyfluoroalkyl substances (PFAS) for the Town's Water District 2 located at 74 Windmill Road in Armonk, New York (the site), and design services for a full-scale treatment system. The proposed tasks are discussed below.

SCOPE OF SERVICES

PHASE 1A: PILOT TEST

Task 1A.1 – Pilot Test Work Plan

We will prepare a pilot test work plan that will include treatment approach, design basis, treatment system setup, operation, monitoring plan, and analytical sampling plan. The work plan will also include a pilot test health and safety plan (HASP). The work plan will be submitted to the Westchester County Department of Health (WCDH) for review and approval. A draft of the work plan can be prepared within three weeks of proposal authorization. This task includes one round of revisions, if received, from the WCDH.

Task 1A.2 – Pilot Test Preparation, Mobilization, and Start-Up

Within three weeks of the approval of the pilot test work plan by the WCDH, a pilot testing column will be delivered to site by Langan. The test column will include an ion exchange (IX) resin column with sampling ports, pressure gauges, pre-treatment filters, and flow totalizers. The pilot test column will be placed in the well house for Wells #3 and #5. We assume that that a connection to the existing water treatment system can be established from within the well house

and that separate enclosure will not be needed for the testing. Langan will provide a means to pump water from the wells to the test column.

The resin columns will be backwashed before initiating flow through the column. Pressure and flow will be monitored during testing and changes will be made to bring the pilot test operation within the pre-determined operating criteria. Once the system operation has stabilized, analytical samples will be collected from the influent and one of the effluent ports.

Task 1A.3 – Pilot Test Operation, Maintenance, and Monitoring

The pilot test operation will be continued until an analytical breakthrough of perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) is observed in the effluent of the test system. Based on the resin vendor feedback, PFOA/PFOS breakthrough may not occur for a period of six months or more. The proposal includes cost for performing testing activities for up to 12 weeks (about three months). If no breakthrough is observed for three months, then that is more than sufficient to conclusively prove that the resin treatment method is effective. The schedule may be further modified depending on whether or not WCDH permits a shorter duration of testing to demonstrate effectiveness of the treatment in removal of PFAS. Analytical samples from the pilot test system will be collected, at a frequency outlined in the forthcoming work plan, by the North Castle Town Engineer in coordination with Langan. Langan will review the analytical data and provide a periodic update on the system performance. Langan anticipates making site visits to check on the condition of the columns on a weekly basis. We assume that the maintenance needed for the pilot test system will be of routine nature without the need for excessive system modifications. If the columns become clogged or biofouled (improbable), unclogging of the columns or reconfiguring the system will constitute an extra service. Once testing is completed, the system operation will be terminated and the system will be demobilized from the site. The spent resin media will be drummed on-site for disposal. An allowance for waste classification and disposal is included in the proposal.

Task 1A.4 – Pilot Test Report

We will prepare a pilot study report that includes the system setup, operating schedule and data, analytical data tables, performance summary, findings, and recommendations. A draft of the report will be available for your review within four weeks of completing the pilot test and receipt of analytical data. If the findings of the pilot study result in a modification of the design, the details will be outlined in the report.

PHASE 1B: TREATABILITY TEST

If WCDH agrees, we may be able to satisfy their requirements for a “pilot test” via a laboratory treatability test. A laboratory study would be less costly, have a shorter duration and would provide useful data on resin effectiveness. Upon project award, we will engage with WCDH to ascertain if the laboratory treatability test will be acceptable. If so, Phase 1B will be substituted for Phase 1A and cost savings passed on to Town of North Castle.

Task 1B.1 – Treatability Test Work Plan

We will prepare a treatability test work plan that will include treatment approach, design basis, test setup, monitoring and analytical sampling plan. The work plan will also include a treatability test HASP. The work plan will be submitted to the WCDH for review and approval. A draft of the work plan can be prepared within three weeks of proposal authorization. This task includes one round of revisions, if received, from the WCDH.

Task 1B.2 – Treatability Test Preparation, Mobilization, and Start-Up

Within three weeks of the approval of the treatability test work plan by the WCDH, a treatability testing column will be assembled at Langan’s Treatability Facility at New Jersey Institute of Technology (NJIT) where the testing will be performed. The test column will include a small-diameter resin column with sampling ports, pressure gauges, pre-treatment filters, and flow totalizers and pumps. It is estimated that approximately three batches of 20 gallons of on-site water will be collected for the treatability testing. Water will be collected from either Well #3 and/or Well #5 before the disinfection (chlorination) process.

Pressure and flow will be monitored during test start-up. Analytical samples will be collected from the influent and one of the effluent ports.

Task 1B.3 – Treatability Test Operation and Monitoring

The treatability test operation is typically continued until a breakthrough of PFOS and PFOA is observed in the effluent of the test system. The breakthrough data is used for design of treatment system, especially if water constituent are likely to interfere in the performance. However, treatability test system can be operated for an abbreviated period to demonstrate removal of PFAS from the influent water stream, rather than operating the test system till a breakthrough is observed. Analytical samples from the treatability test system will be collected, at a frequency outlined in the forthcoming work plan. Langan will review the analytical data and provide a periodic update on the system performance. Langan anticipates making visits to the treatability facility to check on the condition of the columns on a weekly basis. We assume that the maintenance needed for the treatability test system will be of routine nature without the need for excessive system modifications. If the columns become clogged or biofouled (improbable), unclogging of the columns or reconfiguring the system will constitute an extra service. At four weeks of operation, the column testing will be terminated. We assume the spent media and treated water can be disposed through NJIT services.

Task 1B.4 – Treatability Test Report

We will prepare a treatability study report that includes the system setup, operating schedule and data, analytical data tables, performance summary, findings, and recommendations. A draft of the report will be available for your review within four weeks of completing the treatability test and receipt of analytical data. If the findings of the treatability study result in a modification of the design, the details will be outlined in the report.

PHASE 2: FULL SCALE DETAILED DESIGN

Task 2.1 – Full Scale System Design

This task involves a design for the treatment system required for Water District 2 to meet the New York State Department of Health (NYSDOH) Maximum Contaminant Level (MCL) for PFOA and PFOS. This design services will occur concurrent with the pilot/treatability study, as the expectation is that the pilot/treatability study will confirm the design criteria established in the September 2021 Technical Memorandum. Langan will prepare construction documents, including specifications and design drawings.

The Treatment Evaluation Memorandum, dated March 2, 2022, prepared by Langan on behalf of the Town of North Castle and submitted to the WCDH provides implementation and construction considerations and serves as the basis for this proposal. Major components of the planned design include two to four trade size #2 bag filter housings, two 79 cubic foot IX resin units plumbed in series, and associated plumbing and instrumentation to be integrated into the existing infrastructure prior to chlorination. This water treatment equipment is to be housed in an addition to the existing main pump house structure and will include necessary lighting, power, controls integration, building heat, and ventilation. Due to the relative size of the treatment process equipment proposed, additional site-wide investigations and considerations are also included in this proposed design.

Langan will provide survey, geotechnical, structural, site/civil, and environmental engineering design services for the development of bid level design drawings, work plan, specifications, and OM&M plan for a full-scale PFAS treatment system addition at the existing Water District 2. Additionally, this scope of services will include subcontracted design services for electrical and mechanical engineering. Standard specifications will be solicited from water treatment equipment vendors. The following activities are included in this task:

- Pre-design investigations including site survey and geotechnical borings to support equipment placement, building and structural design, and truck routes,
- Construction specifications and drawing set for site/civil, Structural, building construction, mechanical, electrical, and plumbing,
- Electrical and control schematics, process and instrumentation diagrams (P&ID), process flow diagrams (PFD), site and equipment layouts based on site observations, and existing and contractor provided drawings,
- Manufacturer provided specifications for existing/new instrumentation, controls, and process equipment , and

Preliminary Drawing List for the design is as follows (subject to modification):

1. Location Plan
2. Site Plan
3. Equipment Layout
4. Electrical Plan
5. Electrical Line
6. Electrical Schedules & Details
7. Heating, Ventilation and Air Conditioning (HVAC)
8. Structural Design
9. Structural Details
10. P&ID
11. Building Details and Elevation
12. Treatment System Details
13. Site/Civil Plan

Task 3.1 – Coordination and Meetings

We anticipate attendance at town meetings and public hearings, and participation in conference calls with you and town officials may be required over the duration of the pilot/treatability study and full-scale design preparation. This task is an allowance budget, and assumes up to four calls and/or in-person meetings.

Exclusions & Assumptions

Phase 1A: Pilot Test

The treated effluent of the pilot test equipment will be initially drummed, sampled for analysis, and discharge location will be finalized in consultation with the WCDH. Costs for offsite disposal of pilot test process water are not including in this proposal. Should WCDH approved that the effluent from the treatment system can be routed back into the confluent water, a separate permit for the discharge will not be needed.

The current site layout will provide sufficient space necessary for the installation of the pilot test equipment without compromising operability or safety. Existing plumbing will allow direct connection to the pilot test equipment (i.e. existing unused ball valve or sample port location) and significant modifications will not be required.

Based on the review of available water quality data, no additional pretreatment is required. Water quality parameters are assumed to be within the IX media manufacturer's specification range and will not impede the removal efficiency of PFAS compounds in the water process stream. If pre- or post-treatment is required, the additional equipment, installation, and labor costs will be requested under a separate change order.

The existing site infrastructure is assumed to provide sufficient electrical, freeze protection, light, access and health and safety aspects to complete the pilot test activities outlined in this proposal. These items will be included in the full-scale design as proportional to the magnitude of the building addition.

Materials potentially containing PFAS compounds, such as spent IX resin, are assumed to be able to be disposed as non-hazardous waste.

Phase 1B: Treatability Test

We assume spent IX resin and treated effluent from the treatability test equipment can be disposed of through NJIT services. Should additional characterization and specialized disposal be required, additional fees will be provided under separate cover. Costs for offsite disposal of treatability test process water are not including in this proposal.

Phase 2: Design

The site location, proximity to improved roads, known right-of-ways, aerial and photo documentation of the site, Langan's design will require a site survey, utility location services, and soil borings to complete site plans and structural components of the design package. This proposal excludes flood hazard analysis, wetland delineation, ecological risk assessment, and permitting assistance. A fee for these services, if requested or believed to be required during predesign investigations, will be provided under separate cover.

Plans and Specifications provided will be technical-only. General conditions, contract, bond/insurance requirements, supplementary conditions, etc. will be provided directly by North Castle. Measurement and Payment sections will be provided at a later time under the additional scope needed for bidding and construction services. Preparation of an OM&M manual for the site will also be provided at a later time.

We also assume our professional services are not subject to prevailing wage requirements, but recognize that the selected contractor for installation and construction of the full-scale system will be. Specifics of prevailing wage requirements will be included in the general conditions provided by North Castle.

SCHEDULE

The preliminary project schedule is outlined below, based upon authorization by January 1, 2023:

Phase 1: Pilot/Treatability Test

- Issuance of draft Work Plan – three weeks after authorization.
- WCDH review of the Work Plan – est. 30 to 45 days

- Upon approval of the Work Plan – Issuance of final requests for quotation to appropriate vendors and/or contractors, as needed for the test. Generation purchase orders and subcontractor agreements.
- April 2023 (est.) – Acceptance of contractor bids, final designs, work plans, and preparation of the pilot test fieldwork.
- May 2023 (est.) – Delivery, Installation and Startup of the test equipment.
- May to July 2023 (est.) – Operation, Maintenance, and Monitoring of the test.
- July to August 2023 (est.) – Issuance of Test Report and Finalization of Full Scale Design activities.

Phase 2: Design

- Upon acceptable of this proposal – Full Scale Design activities will commence.
- August 2023 (est.) – Issuance of draft Full Scale Design deliverables for review.
- September 2023 – Revision and issuance of final Full-Scale Design construction level deliverables to include Test Report and findings.

ESTIMATED FEES

Our proposed fees for engineering services including analytical laboratory and reimbursable expenses are presented in the table below. Note that that a cost is not provided for Phase 1B – Treatability Test, as the scope of that approach would need to be refined through discussion with WCDOH. However, laboratory treatability will be less costly than a field pilot test.

Scope of Services	Langan Fees	Langan Expenses	Subcontractors Fees
Phase 1.A - Pilot Test			
Task 1A.1 - Pilot Test Work Plan (lump sum)	\$ 12,000	\$ -	\$ -
Task 1A.2 - Pilot Test Preparation, Mobilization, and Start-Up	\$ 24,200	\$ 6,900	\$ -
Task 1A.3 - Pilot Test OM&M	\$ 24,600	\$ 3,800	\$ 10,300
Task 1A.4 - Pilot Test Report	\$ 15,700	\$ -	\$ -
Phase IA Subtotal	\$ 76,500	\$ 10,700	\$ 10,300
Phase 2 - Full Scale Design			
Task 2.1 - Full-Scale Treatment System Design	\$ 65,000	\$ 5,500	\$ 27,000
Phase II Subtotal	\$ 65,000	\$ 5,500	\$ 27,000
Task 3.1 Coordination and Meetings	\$ 5,000		
Total (including Phase 1A)	\$ 146,500	\$ 16,200	\$ 37,300

CLOSING

The scope of services presented herein are for the PFAS Treatment Pilot Test and Full Scale Design. The estimate for the work to be performed is \$200,000, which includes \$53,500 in subcontractor/vendor/reimbursable costs. The services will be performed on a T&M basis, except for the Pilot Test Work Plan, in accordance with the existing terms and conditions for the project.

We appreciate the opportunity to provide you with this work scope, and look forward to continuing our work with you on this project. If you should have any questions regarding this cost estimate, or require additional information, please contact us.

Sincerely,

**Langan Engineering, Environmental, Surveying,
Landscape Architecture and Geology, D.P.C.**



Ryan Manderbach, CHMM
Associate Principal/Vice President



Stewart Abrams, PE
Principal/Vice President

Enclosure(s): Schedule of Fees and General Terms and Conditions
cc: M. Burke, K. Semon (Langan)

AUTHORIZATION

Receipt of this Proposal, including the Schedule of Fees and General Terms and Conditions annexed hereto, is hereby acknowledged and all of the terms and conditions contained therein are accepted.

Mr. Kevin Hay
Town Administrator, Town of North Castle
15 Bedford Road
Armonk, NY 10504

**Re: Langan Engineering, Environmental Surveying,
Landscape Architecture and Geology, D.P.C.
December 20, 2022 Proposal for PFAS Treatment Pilot Test and
Full Scale Design Services (Revised December 9, 2022)
Town of North Castle Public Water Supply Water District 2
North Castle, NY 10504
Langan Project No.: 190073501**

Company: Town of North Castle ("Client")

By/Title: Michael Schiliro Town Supervisor
(Authorized representative)

Signature: 

Date: 12-21-22

GENERAL TERMS AND CONDITIONS

These Terms and Conditions shall apply to services provided by **Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.; or Langan Engineering and Environmental Services, Inc.; or Langan CT, Inc.; or Langan MA, Inc.; or Langan MI, Inc.; or Langan International, LLC;** or such other Langan entity specifically identified in the Proposal (each individually, a "**LANGAN ENTITY**"); and together with the proposal to which these Terms and Conditions are attached (hereinafter, the "**Proposal**"), shall constitute the "**Agreement**." For purposes of this Agreement, the **LANGAN ENTITY** identified in the Proposal shall be referred to as "**LANGAN**" and the entity signing the Proposal shall be referred to as "**CLIENT**."

A. SCOPE OF SERVICES AND ADDITIONAL SERVICES

LANGAN will provide those services specifically identified in the Proposal (hereinafter, the "Services"). All Services, regardless of the commencement date, will be covered by these Terms and Conditions. All services not specifically identified in the Proposal are excluded; provided, however, that if requested by the CLIENT and agreed to by LANGAN in writing, LANGAN will perform such additional services ("Additional Services") subject to these Terms and Conditions. Unless otherwise agreed in writing, the CLIENT shall pay LANGAN for the performance of any Additional Services on a time-and-materials basis based upon LANGAN's then-current hourly rates. For avoidance of doubt, email will constitute written notice.

B. STANDARD OF CARE

LANGAN's services will be performed in accordance with this Agreement and in a manner consistent with the generally accepted standard of care and skill ordinarily exercised by professionals performing similar services under similar circumstances at the place and time the services are being performed (the "Standard of Care"). LANGAN will exercise reasonable professional care in its efforts to comply with codes, regulations, laws, rules, ordinances, and such other requirements in effect as of the date of execution of this Agreement. The CLIENT agrees that no other representation, warranty or guarantee, expressed or implied, is provided by LANGAN or is presumed given by LANGAN under this Agreement or in any report, opinion, or any other document prepared by LANGAN or otherwise.

C. CLIENT RESPONSIBILITIES

In addition to other responsibilities described herein, the CLIENT shall: (i) provide all information and criteria as to the CLIENT's requirements, objectives, and expectations for the project, including all numerical criteria that are to be met and all standards of development, design, or construction and all other information reasonably necessary for completion of the Services, prior to the commencement of the Services; (ii) provide prompt, complete disclosure of known or potential hazardous conditions or health and safety risks; (iii) provide to LANGAN all previous studies, plans, or other documents pertaining to the project and all new data reasonably necessary in LANGAN's opinion for completion of the Services; (iv) review all documents or oral reports presented by LANGAN and render in writing decisions pertaining thereto within a reasonable time so as not to delay the Services; (v) furnish approvals and permits from governmental authorities having jurisdiction over the project and approvals and consents from other parties as may be necessary for completion of LANGAN's Services; (vi) give prompt written notice to LANGAN whenever the CLIENT becomes aware of any development that affects the scope and timing of LANGAN's Services or any defect or noncompliance in any aspect of the project; and (vii) bear all costs incident to the responsibilities of the CLIENT. LANGAN will have the right to reasonable reliance upon the accuracy and completeness of all information furnished by the CLIENT.

D. INVOICING AND SERVICE CHARGES

LANGAN will submit monthly invoices to the CLIENT and a final bill upon completion of Services. The CLIENT and LANGAN will promptly resolve any disputed items. Payment on undisputed invoice amounts is due upon receipt of invoice by the CLIENT and is past-due sixty (60) days from the date of the invoice. Any unpaid balances shall accrue late charges of 1.5% per month, or the highest rate allowed by law, whichever is lower.

E. RIGHT OF ENTRY

The CLIENT shall provide for safe right of entry in order for LANGAN to perform its Services, including execution of any site access or license agreements required for completion of the Services. LANGAN will not be required to execute any site access or license agreement(s). While LANGAN will take all reasonable precautions to minimize any damage to the property, the CLIENT acknowledges and agrees that in the normal course of work some damage may occur, the correction of which is not part of this Agreement unless specifically provided in the proposal.

F. JOBSITE SAFETY AND CONTROL OF WORK

LANGAN will take reasonable precautions to safeguard its own employees and those for whom LANGAN is legally responsible. Unless expressly agreed to in writing by LANGAN under separate contract, LANGAN will have no responsibility for the safety program at the Project or the safety of any entity or person other than LANGAN and its employees. Neither the professional activities of LANGAN nor the presence of LANGAN's employees and subcontractors at the Project site will be construed to confer upon LANGAN any responsibility for any activities on site performed by personnel other than LANGAN's employees and subcontractors. The CLIENT agrees that LANGAN will have no power, authority, right or obligation to supervise, direct, stop the work of or control the activities of any other contractors or subcontractors or construction manager, their agents, servants or employees.

G. EXISTING CONDITIONS AND SUBSURFACE RISKS

Special risks occur whenever engineering or related disciplines are applied to identify subsurface conditions. Even a comprehensive sampling and testing program implemented in accordance with a professional Standard of Care may fail to detect certain conditions. The environmental, geologic, geotechnical, geochemical, and hydrogeologic conditions that LANGAN interprets to exist between sampling points will differ from those that actually exist. The CLIENT recognizes that actual conditions will vary from those encountered at the locations where borings, sampling, surveys, observations or explorations are made by LANGAN or its subcontractors and that the data, interpretation, and recommendations of LANGAN are based solely on the information available to it. Furthermore, the CLIENT recognizes that passage of time, natural occurrences, and/or direct or indirect human intervention at or near the site may substantially alter discovered conditions. LANGAN shall not be responsible for interpretations by others of the information it develops or provides to the CLIENT.

LANGAN will take reasonable precautions to avoid damage or injury to subterranean structures or utilities in the performance of its services. The CLIENT agrees to defend, indemnify, and hold LANGAN harmless for any damage to subterranean structures or utilities and for any impact this damage may cause where the subterranean structures or utilities are not called to LANGAN's attention or are not correctly shown on the plans furnished by CLIENT or third parties, except where such damage is caused by LANGAN'S negligence.

H. HAZARDOUS MATERIALS

Unless otherwise expressly agreed to in writing, the parties acknowledge that LANGAN'S scope of services does not include any services related to a hazardous environmental condition (such as asbestos, PCBs, petroleum, mold, waste, radioactive materials or any other hazardous substance). The discovery of any such condition shall be considered a changed condition and LANGAN may suspend its services until the CLIENT has resolved the condition.

I. INDEMNIFICATION

Subject to the provisions of Section J of these General Terms and Conditions, LANGAN agrees to indemnify and hold harmless the CLIENT and CLIENT's parent companies, subsidiaries, affiliates, partners, officers, directors, shareholders, and employees for any and all damage obligations, liabilities, judgments, and losses for personal injury and/or property damage including reasonable attorney's fees and other expenses and disbursements, asserted by any third parties to the extent determined to have been caused by the negligent acts, errors or omissions or willful misconduct of LANGAN in the performance of its services under this Agreement. LANGAN will not be responsible for any loss, damage, or liability arising from any acts by the CLIENT or any of its agents, employees, staff, or other consultants, subconsultants, contractors or subcontractors.

To the fullest extent permitted by law, the CLIENT agrees to indemnify, defend and hold harmless LANGAN and LANGAN's parent companies, subsidiaries, affiliates, partners, officers, directors, shareholders, and employees for any and all, damage obligations, liabilities, judgments and losses, including reasonable attorneys' fees and all other expenses and disbursements, to which LANGAN may be subject, arising from or relating to (i) any unknown site condition or subterranean structures of which LANGAN does not have actual knowledge; (ii) any errors, omissions or inconsistencies in any data documents, records or information provided by the CLIENT on which LANGAN reasonably relied; (iii) any breach of contract, tort, error, omission, wrong, fault, or failure to comply with law by the CLIENT or third party over whom LANGAN has no control; (iv) the transport, treatment, removal or disposal of all Samples; and (v) the CLIENT's unauthorized use or copyright violation of plans, reports, documents and related materials prepared by LANGAN.

In connection with any construction project, CLIENT agrees to insert the following wording into any General Contract, Construction Management Agreement, or foundation contractor's contract: "To the extent permitted by law, and to the extent not proven to be caused in whole or in part by an indemnitee's own negligence, the contractor and its subcontractors of any tier shall indemnify, defend, save and hold harmless the CLIENT and LANGAN from and against all liability, damage, loss, claims, demands and actions of any nature whatsoever (including reasonable attorneys' fees and litigation costs) which arise out of or are connected with or are claimed to arise out of or claimed to be connected with the design (to the extent the design is based on calculations, plans and drawings by contractor or anyone acting by, through or under contractor for which contractor is responsible) and performance of work by the contractor, or any act or omission of the contractor. Without limiting the generality of the foregoing, such defense and indemnity shall include all liability, damages, loss, claims, demands and actions on account of personal injury, death, property damage or any other economic loss to any indemnitee, any of indemnitees' employees, agents, contractors or subcontractors, licensees or invitees, or sustained by any other persons or entities, whether based upon, or claimed to be based upon, statutory (including, without limiting the generality of the foregoing, workers' compensation), contractual, tort or other liability of any indemnitee, contractor, subcontractor or any other persons."

In connection with any damages, loss, suit, claim or proceeding arising from or otherwise related to the execution of excavation, support of excavation, foundations, or underpinning activities, CLIENT agrees to use all reasonable efforts to seek defense and indemnification from the Contractor and Subcontractor responsible for the work, and, to the extent the CLIENT is entitled to be or is otherwise indemnified by contractors/subcontractors, CLIENT shall not seek indemnification from LANGAN.

Payment by CLIENT in accordance with Section D of this Agreement is a condition precedent to LANGAN's indemnification obligations, except for any amounts asserted by CLIENT to be in dispute.

In the event any part of this indemnification is determined to be void as a matter of law, then the clause shall automatically be reformed to be consistent with the law and apply the parties' intent to the maximum extent permissible by law.

J. LIMITATION OF LIABILITY

To the fullest extent permitted by law, the total liability, in the aggregate, of LANGAN and its officers, directors, partners, employees, agents, and subconsultants, to CLIENT, and anyone claiming by, through, or under CLIENT, and to any third parties granted reliance by LANGAN per Section O, for any claims, losses, costs, or damages whatsoever arising out of, resulting from or in any way relating to this Project or Agreement, from any cause or causes, including but not limited to tort (including negligence and professional errors and omissions), strict liability, breach of contract, or breach of warranty, shall not exceed an amount equal to the total proceeds available from insurance up to the limits required by Section L, for the policy covering the claim.

K. WAIVER OF CONSEQUENTIAL DAMAGES

LANGAN and the CLIENT waive all consequential or special damages, including, but not limited to, loss of use, profits, revenue, business opportunity, or production, for claims, disputes, or other matters arising out of or relating to the services provided by LANGAN regardless of whether such claim or dispute is based upon breach of contract, willful misconduct or negligent act or omission of either of them or their employees, agents, subconsultants, or other legal theory. This mutual waiver shall survive termination or completion of this Agreement.

L. INSURANCE

LANGAN agrees to maintain workers' compensation insurance as required by law and general liability, automobile and professional liability insurance with limits of \$2,000,000. Certificates of insurance will be issued to the CLIENT upon written request and CLIENT will be added as a named additional insured.

The CLIENT agrees that it will require the construction manager, general contractor and, the contractor(s) responsible for performing the work reflected by or relating to LANGAN's services on the Project, to name LANGAN as an additional insured on its Commercial General Liability and Excess/Umbrella insurance policies inclusive of operations, completed operations, and products liability coverage provisions. Such additional insured coverage shall be provided by endorsement CG 20 32 04 13 (for ongoing operations) and endorsement CG 20 37 04 13 (for completed operations).

To the fullest extent permitted by law, CLIENT hereby waives all rights of recovery under subrogation against LANGAN and its consultants.

M. FORCE MAJEURE

LANGAN will not be responsible or liable for any delays in performance, failure of performance or additional costs incurred by CLIENT related to any force majeure event, including but not limited to fire, flood, explosion, the elements, or other catastrophe, unforeseen existing or subsurface conditions, acts of God, war, riot, civil disturbances, terrorist act, strike, lock-out, refusal of employees to work, labor disputes, inability to obtain materials or services, recognized health threats as determined by the World Health Organization, the Center for Disease Control, or local governments or health agencies (including but not limited to health threats of COVID-19, H1N1, or similar infectious diseases), or delays caused by the CLIENT, its agents, contractors, subcontractors, consultants, subconsultants or employees, or any governmental regulation or agency, or for any other cause beyond the reasonable control of LANGAN.

N. OPINION OF COST

Consistent with the Standard of Care in Section B of these General Terms and Conditions, any opinions rendered by LANGAN as to costs, including, but not limited to, opinions as to the costs of construction, remediation and materials, shall be made on the basis of its experience and shall represent its judgment as an experienced and qualified professional familiar with the industry. LANGAN cannot and does not guarantee that proposals, bids, or actual costs will not vary from its opinions of cost. LANGAN's services required to bring costs within any limitation established by the CLIENT will be paid for as Additional Services.

O. PROJECT DELIVERABLES

All reports, opinions, notes, drawings, specifications, data, calculations, and other documents prepared by LANGAN and all electronic media prepared by LANGAN are considered its project Deliverables to which LANGAN retains all rights. The CLIENT acknowledges that electronic media are susceptible to unauthorized modification, deterioration, and incompatibility; and therefore, the CLIENT cannot rely upon the electronic media version of LANGAN's Deliverables. All Deliverables provided by LANGAN to the CLIENT as part of the Services are provided for the sole and exclusive use of the CLIENT with respect to the Project. Reliance upon or reuse of the Deliverables by third parties without LANGAN's prior written authorization is strictly prohibited; provided, however, that LANGAN, in its sole discretion, may agree to grant reliance to a single relying party subject to (i) the payment by CLIENT of a reliance fee equal to 10 percent (10%) of the amount paid by CLIENT for the Deliverables upon which reliance is to be granted, and (ii) acceptance by the relying party of Langan's standard reliance letter (a copy of which will be provided to CLIENT and relying party upon request).

If the CLIENT distributes, reuses, or modifies LANGAN's Deliverables without the prior written authorization of LANGAN, or uses LANGAN's Deliverables to complete the project without LANGAN'S participation, the CLIENT agrees, to the fullest extent permitted by law, to release LANGAN, its officers, directors, employees and subconsultants from all claims and causes of action arising from such distribution, modification or use, and shall indemnify and hold LANGAN harmless from all costs and expenses, including the cost of defense, related to claims and causes of action arising therefrom or related thereto.

LANGAN will not sign any documents that certify the existence of conditions whose existence LANGAN cannot ascertain, or execute certificates or consents that would require knowledge, services or responsibilities beyond the scope of this Agreement. In the event LANGAN is required to execute any certifications, it is understood and agreed that: (i) the words "certify" or "certification" shall mean an expression of LANGAN's professional opinion based upon available information and consistent with the Standard of Care; and (ii) such certification does not constitute a warranty or guarantee by LANGAN.

P. CONFLICTS OF INTEREST

LANGAN provides engineering and other services on behalf of many companies and individuals; thus, during the time LANGAN is providing services to CLIENT it may also provide engineering and other services, unrelated to the services LANGAN is providing to CLIENT, to other present or future clients of LANGAN with interests adverse to CLIENT'S interests. CLIENT agrees that LANGAN'S services to CLIENT will not disqualify LANGAN from providing services to other clients in matters that are unrelated to the services LANGAN is providing to CLIENT, and CLIENT hereby waives any conflict of interest with respect to those services. LANGAN agrees not to use or disclose any proprietary or other confidential information of a nonpublic nature concerning CLIENT, which is acquired by LANGAN as a result of its service to CLIENT, in connection with any other matter, unless required to do so by law.

Q. TERMINATION AND SUSPENSION

Except as otherwise provided in this Agreement, this Agreement may be terminated by either party upon not less than seven (7) calendar days' written notice should the other party fail substantially to perform in accordance with the terms and conditions of this Agreement through no fault of the party initiating the termination. If the defaulting party fails to cure its default within the seven (7) calendar day notice period or fails to commence action to cure its default if the cure cannot reasonably be completed within the seven (7) days, the non-defaulting party may terminate the Agreement.

Failure of the CLIENT to make payments to LANGAN in accordance with this Agreement shall be considered substantial non-performance and grounds for termination or suspension of services at LANGAN's option after such seven (7) day notice period or anytime thereafter. In the event of suspension for non-payment, LANGAN shall have the right to: (i) withhold its project Deliverables; and (ii) demand advanced payment for future services. Furthermore, LANGAN will be compensated for all services performed and reimbursable expenses incurred prior to such termination and all termination expenses.

In the event of a suspension of services or termination of the Agreement by LANGAN in accordance with this Section Q, LANGAN will have no liability for any delay or damage of any kind actually or allegedly caused by such suspension of services or termination. CLIENT shall not withhold amounts from LANGAN'S compensation to impose a penalty or damages on LANGAN, or to offset sums requested by or paid to contractors for the cost of changes in their work unless LANGAN agrees or has been found liable for the amounts.

R. DISPOSAL OF SAMPLES

All samples, contaminated or otherwise ("Samples"), collected by LANGAN while performing services under this agreement remain the property and responsibility of the CLIENT. LANGAN may dispose of Samples in its possession after ninety (90) calendar days from the date the samples are taken unless otherwise required by law or other arrangements are mutually agreed to in writing by the parties. At all times, any and all rights, title and responsibility for Samples shall remain with the CLIENT. Under no circumstances shall these rights, title and responsibility be transferred to LANGAN, and nothing contained in this Agreement shall be construed as requiring LANGAN to assume the status of an owner, operator, generator, storer, transporter or person who arranges for disposal, under any federal or state law or regulation. CLIENT shall reimburse LANGAN for the actual cost of disposal plus 15%.

S. RIGHT TO REFERENCE PROJECT

The CLIENT agrees that LANGAN has the authority to use its name as the CLIENT and a general description of the Project as a reference for other prospective clients.

T. SUCCESSORS AND ASSIGNS

This Agreement shall be binding upon the parties hereto and their respective successors and assigns. Neither party may assign or transfer this Agreement without the prior written consent of the other party. The parties agree that this Agreement is not intended to give any benefits, rights, actions or remedies to any person or entity not a party to this Agreement, as a third-party beneficiary or otherwise under any theory of law.

If LANGAN is requested to execute a consent to assignment of this Agreement to a lender or other entity providing financing for the Project, LANGAN, in its sole but reasonable discretion, may agree to execute any such document provided it does not materially alter LANGAN's risk exposure or obligations under this Agreement, and provided the assignee agrees to: (i) pay any amounts due and owing at the time of assignment; (ii) pay any amounts to become due subsequent to such assignment; and (iii) be bound by the terms and conditions of this Agreement.

U. DISPUTE RESOLUTION

LANGAN and the CLIENT agree that any disputes arising under this Agreement and the performance thereof shall be subject to non-binding mediation as a prerequisite to further legal proceedings, which proceeding must be brought in a court of competent jurisdiction in the state in which the office of LANGAN that issued the Proposal is located. LANGAN and CLIENT waive any right to a trial by jury.

All actions by CLIENT against LANGAN, and by LANGAN against CLIENT whether for breach of contract, tort or otherwise, shall be brought within the period specified by applicable law, but in no event more than five (5) years following substantial completion of LANGAN'S services. CLIENT and LANGAN unconditionally and irrevocably waive all claims and causes of action not commenced in accordance with this paragraph.

V. GOVERNING LAW

This Agreement shall be governed by and construed in accordance with the laws of the state in which the office of LANGAN that issued the Proposal is located.

W. ENTIRE AGREEMENT

Unless a separate agreement is executed by the parties, upon receipt of direction to proceed from CLIENT and commencement of the SERVICES by LANGAN, and regardless of whether CLIENT signs the Proposal, these General Terms and Conditions will govern LANGAN'S performance of the Services.

This Agreement (consisting of these General Terms and Conditions, the accompanying Proposal and LANGAN'S Fee Schedule, if applicable) constitutes the entire agreement between the parties, supersede any and all prior agreements or representations of the parties to this agreement and conflicting terms on documents created by the CLIENT, and may not be modified, amended, or varied except by a document in writing signed by the parties hereto.

SCHEDULE OF FEES AND CONDITIONS

Effective 1 January 2022

BILLING CATEGORY	HOURLY BILLING RATE
Technician I	90
Technician II	125
Technician III	150
Staff Personnel - Level I	200
Staff Personnel - Level II	215
Staff Personnel - Level III	230
Senior Staff Personnel - Level I	245
Senior Staff Personnel - Level II	260
Senior Staff Personnel - Level III	280
Project Personnel - Level I	290
Project Personnel - Level II	300
Project Personnel - Level III	315
Senior Project Personnel - Level I	325
Senior Project Personnel - Level II	340
Executive Associate/Senior Associate/Associate	355
Associate Principal	385
Principal	395
Senior Principal	445

- Managing Principals are billed at \$500/Hour
- Senior Consultants are billed at \$485/Hour
- At any level, personnel may be engineers, geologists, hydrogeologists, landscape architects, regulatory specialists, scientists, planners, toxicologists, wetland specialists, etc.
- Litigation related services, including expert testimony, court appearances, depositions, etc. are billed at 1.5 times the above rates. The services will be billed at a minimum of 4 hours for up to one half day and a minimum of 8 hours for services over 4 hours.
- Langan reserves the right to make adjustments for individuals within these classifications as may be necessary by reason of promotion, and to increase our hourly billing rates due to annual salary increases.

COMPUTER SERVICES

Our in-house computer usage is billed on a time used basis at the following rates:

CADD, GIS and Terrain Modeling Programs
Engineering Programs/Digitizing

Rate per Hour
\$30.00
\$25.00

SURVEYING SERVICES

See survey-specific Schedule of Fees and Conditions

SUBCONTRACTOR/SUBCONSULTANT COSTS

All subcontracted services including lab tests and analyses, borings, test pits, report reproduction, outside computer services, surveying, etc., will be billed at cost plus 15%.

REIMBURSABLE EXPENSES

PROFESSIONAL LIABILITY AND RELATED INSURANCE

A surcharge of 4% will be added to the invoice total to cover the cost of Professional Liability Insurance and related costs of insurance.

IN-HOUSE LABORATORY TESTS

Laboratory testing will be billed at unit rates depending on the type of test. A schedule of unit prices for standard laboratory tests will be furnished upon request. Engineering soil and/or rock samples will be stored for 90 days without charge and will be discarded, or returned to the client, unless otherwise requested by the client. Sample storage past 90 days will be billed at \$10.00 per box per month.

HEALTH AND SAFETY AND OTHER SPECIAL FIELD EQUIPMENT

Special equipment such as nuclear densitometers, seismographs, load test equipment, surveying equipment, disposable protective equipment, and respirator cartridges will be billed on a daily rate. PID's and similar safety and/or monitoring equipment will be billed on daily, weekly or monthly rates. A rate schedule will be provided upon request.

OTHER EXPENSES

All expenses incurred for special supplies, plotting and plan reproduction, long distance communications, travel and subsistence and other project related expenses will be billed at cost plus 10%. Car mileage is billed at current IRS rates. Sampling vans/Field Vehicles are billed at a daily rate of \$195.

PREVAILING WAGE

If applicable, prevailing wage premium will be added to the rates stated above.

TERMS

Invoices are payable within 30 days. Service charge of 1.5% /mo. will be imposed on all bills not paid w/in 30 days. If a bill remains unpaid after 60 days, we will discontinue our work until payments are received to bring your account current. We reserve the right to terminate an account without notice for non-payment.