REPORT

Geotechnical Exploration
Rockdale Co. Water Resources
Gees Mill WTP
New Storage Tank
48” Waterline Extension
Conyers, GA

Project Number
2016.5078.01

September 19, 2016

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September 19, 2016

Mr. Julio E. Trinidad
Rockdale Water Resources
1329 Portman Dr., Suite H
Conyers, GA 30094

Via e-mail: Julio.Trinidad@rockdalecounty.gov

RE: Report of Geotechnical Exploration
Gees Mill Water Treatment Plant (WTP)
New 10 MGD Storage Tank 48-in Waterline Extension
Conyers, Georgia
Project No. 2016.5078.01

Dear Mr. Trinidad:

United Consulting is pleased to submit this revised report of our Geotechnical Exploration for the above-referenced project. We appreciate the opportunity to assist you with this project and look forward to our continued participation. Please contact us if you have any questions or if we can be of further assistance.

Sincerely,

UNITED CONSULTING

GEORGIA REGISTERED No. 22149 PROFESSIONAL ENGINEER RAFAEL I. OSPINA

Rafael I. Ospina, P.E.
Senior Geotechnical Engineer

Chris Roberds, P.G.
Senior Executive Vice President

EJR/RIO/CLR/nj

http://ucblade10/sites/Geotechenv/10015/2016.5078.01/Geotechnical Documents/2016.5078.01geo..rev 9-19-2016.doc

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EXECUTIVE SUMMARY

United Consulting has completed a Geotechnical Exploration for the Gees Mill Water Treatment Plant 10 MGD Storage Tank and 48-in Waterline Extension site on Gees Mill Road in Conyers, Rockdale County, Georgia. Please refer to the text of the report for a more detailed discussion of the items summarized below.

1. A complete geotechnical engineering service is performed through the Observational Method as an indivisible two-phase process. The first phase provides advice about project specific risks and represents our firm's opinion of subsurface conditions with recommendations. Field observation during construction comprises the second phase of our service and provides us the opportunity to assess the reliability of the subsurface data and the appropriateness of our recommendations. Actual conditions sometimes differ from those encountered in the exploration phase.

2. Most of the borings encountered fill to depths ranging from approximately 3 to 8 feet. The fill generally appeared to be clean and free of organics, and suitable for reuse as sewerline backfill. Unsuitable materials, if encountered in the fill soils during trench excavation, shall be removed and replaced and/or stabilized per geotechnical engineer's recommendations.

3. Groundwater was not encountered at the time of drilling in the borings. Shallow groundwater is not generally expected to be problematic for this project.

4. Partially Weathered Rock (PWR) was encountered in all of the borings at depths ranging from 3 feet to 15 feet. Auger refusal occurred in borings B-102 and B-103 at depths ranging from 4 feet to 8 feet. The extent of difficult excavation (ripping or blasting of PWR or rock will depend on the actual grading plan and utility locations and profiles.

5. Installation of the new pipeline extension may require excavation of PWR or rock depending on the invert of the new pipeline (depths greater than 4 ft bgs). Site soils encountered in the borings along the new pipeline are classified as Type C soils. Trench excavation and safety should be in accordance with OSHA Excavation standards (29 CFR Part 1926, Subpart P).

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1.0 PROJECT INFORMATION

The Project Site consisted of wooded and grassed areas located to the east of the Gees Mill Water Treatment Plant on Gees Mill Road in Conyers, Rockdale County, Georgia. The site contained the existing water treatment plant. An internal road was observed surrounding the plant.

The properties surrounding the Project Site mainly consisted of wooded land. The general location of the Project Site is shown on the attached Boring Location Plan (Figures 1).

Based on our visual observations and the provided topographic site plan, topography at the site is flat to gradual sloping terrain.

Since the pipeline extension alignment plan has not been finalized, the following discussions and recommendations should be considered preliminary. Boring locations were surveyed prior to mobilization to the site by Rockdale County Water Resources staff. In the event that the new pipeline extension alignment is modified in the final design plans, additional subsurface exploration and engineering analyses will be required to provide recommendations specific to the planned construction. United Consulting must be contacted to determine if our preliminary recommendations should be re-evaluated and/or revised.

2.0 PURPOSE

The purpose of this geotechnical exploration was to assess potential rock along the alignment of the proposed pipeline extension, unsuitable and possible soft areas, to determine if the existing soils are suitable for use as engineered fill, the presence of groundwater, and to provide pipe trench excavation and backfill placement recommendations.

3.0 SCOPE

The scope of our geotechnical exploration included the following items:

1. Providing dozer clearing to access boring locations where necessary, and contacting the utility locate company prior to drilling operations.

2. Drilling three (3) Standard Penetration Test (SPT) borings to further assess the quality and consistency of the subsurface soils;

3. Visual evaluation of the soil samples obtained during our field testing program for further identification and classification;

4. Analyzing the existing soil conditions with respect to the proposed construction; and

5. Preparing this report to document the results of our field-testing program, engineering analysis, and to provide our findings and general recommendations.

4.0 SUBSURFACE CONDITIONS

Initially, the borings encountered a layer of topsoil. Below the existing ground cover, the borings encountered fill soils to depths ranging from about 3 feet to 8 feet below the ground surface. The fill generally consisted of loose to medium dense sand with varying amounts of silt and clay with traces of mica, root hairs and wood fragments. The N-values within the fill soils ranged from 7 to 22 blows per foot (bpf).

Below the fill soils, the borings encountered residual soils. The residual soils encountered generally consisted of firm sand with some silt and traces of clay and mica. The N-values within the residual sand soils was 14 bpf.

Partially Weathered Rock (PWR) was encountered in borings B-101, B-102, and B-103 at a depth of 13, 3.5, and 8.5 feet, respectively. PWR is a term for the residuum that can be penetrated by soil drilling auger and has N-values in excess of 100 bpf. The PWR encountered was classified as very dense sand with varying amounts of silt and traces of clay, and mica.

Auger refusal occurred in borings B-102 and B-103 at depths ranging from 4 feet to 8.5 feet. Auger refusal is a depth that the boring cannot be advanced with soil drilling auger. Auger refusal below residual generally represents a seam of rock, a boulder, or top of massive bedrock.

Groundwater was not encountered at the time of drilling in any of the borings. Groundwater levels should be anticipated to fluctuate with the change of seasons, during periods of very low or high precipitation, or due change in floodplain or watershed upstream of the site.

For a more detailed description of the subsurface conditions encountered, please refer to the boring logs in The Appendix.

5.0 DISCUSSION AND PRELIMINARY RECOMMENDATIONS

The following recommendations are based on our understanding of the proposed construction, the data obtained in our soil test borings, a site reconnaissance, and our experience with subsurface conditions similar to those encountered at the project site.

Since the pipeline extension alignment plan has not been finalized, in the event that the new pipeline extension alignment is modified in the final design plans, United Consulting must be contacted to determine if our preliminary recommendations should be re-evaluated and/or revised.

5.1 Existing Fill Evaluation

Approximately 3 to 8 feet of fill was encountered in the borings drilled along the new pipeline alignment. The fill generally appeared to be clean and free of organics, and suitable for reuse as sewerline backfill.

Unsuitable materials, if encountered in the fill soils during trench excavation, shall be removed and replaced and/or stabilized per geotechnical engineer's recommendations. United Consulting also recommends that the project budget includes contingency funds in the event that soft soils, buried boulders, or other unsuitable materials requiring removal are encountered within the fill.

Site soils encountered in the borings along the new pipeline are classified as Type C soils. Trench excavation and safety should be in accordance with OSHA Excavation standards (29 CFR Part 1926, Subpart P). Excavation standards do not require a protective system when an excavation is made entirely in stable rock or when an excavation is less than 5 feet deep and a competent person has examined the ground and found no indication of a potential cave-in.

5.2 Difficult Excavation

In all of the borings, partially weathered rock (PWR) was encountered at depths ranging from about 3 feet to 14 feet. Auger refusal occurred in borings B-102 and B-103 at depths ranging from about 4 feet to 8 feet.

Difficult excavation conditions (ripping and/or blasting) associated with relatively shallow PWR and/or rock is not generally expected unless excavations greater than about 4 feet or so are planned. The actual extent of difficult excavation will depend on the invert elevation of the new pipeline extension.

PWR typically requires loosening by ripping with large dozers pulling single tooth rippers in mass excavation. The use of specialized excavation equipment (such as ram-hoes, jackhammers, or possibly blasting) is typically required for PWR excavation in confined (trench) excavations. Relatively sound, massive, rock typically requires blasting for removal in mass or trench excavation.

Excavation techniques will vary based on the weathering of the materials, fracturing and jointing in the rock, and the overall stratigraphy of the feature. Actual field conditions usually display a gradual weathering progression with poorly defined and uneven boundaries between layers of different materials. We recommend that the following definitions for rock in earthwork excavation be included in bid documents:

1. General Excavation: Any material occupying an original volume of more than 1 cubic yard which cannot be excavated with a single-tooth ripper drawn by a crawler tractor having a minimum draw bar pull rating of not less than 80,000 lbs. usable pull (Caterpillar D-8 or larger).

2. Trench Excavation: Any material occupying an original volume of more than 1/2 cubic yard which cannot be excavated with a backhoe having a bucket curling force rated at not less than 40,000 lbs., using a rock bucket and rock teeth (John Deere 790 or larger).

Removal of rock by blasting can be very expensive. The costs of excavation vary with the type of material encountered and the quantities to be excavated. Hence, control of quantities is important. You may consider exposing the rock surface prior to blasting so the rock quantities can be more accurately estimated using surveying methods. Leaving soil overburden in place during blasting may result in difficulties in determination of blast rock quantities resulting in greater rock excavation costs. Also, residual soil overburden may increase the confining pressure of the rock and reduce the effectiveness of blast charges. Loose fill or blasting mats can be placed over the blast area to control fly-rock.

5.3 Groundwater Considerations

Groundwater was not encountered at the time of drilling in the borings. Shallow groundwater is not generally expected to be problematic for this project. However, due to presence of varying soil types and the presence of up to 8 feet of fill, the site may be susceptible to the formation of localized zones of perched water. The contractor should be prepared to control surface water runoff and to dewater excavations, as needed.

5.4 Earthwork

Most of the on-site soils should generally be suitable for reuse as engineered fill with proper moisture control. However, some of the existing fill appeared to contain significant amounts of topsoil, organics, rock fragments, boulders, and other deleterious materials and would not likely be suitable for reuse. Test pits are recommended to further evaluate the suitability of the existing fill.

Due to the presence of high silt and clay content, the onsite soil may be sensitive to moisture variation. During rainy seasons, these soils may become unstable and their reuse as engineered fill may not be feasible. These soils should be placed within a narrow range of their optimum moisture content to achieve proper compaction. Typical restrictions on suitable fill are no organics, plasticity index less than 25, and maximum particle size of four inches, with not more than 30 percent greater than 3/4-inch. These restrictions should also be applied to imported borrow soils if needed.

Positive drainage should be maintained at all times to prevent saturation of exposed soils in case of sudden rains. Rolling the surface of disturbed soils will also improve runoff and reduce the soil moisture and construction delays.

6.0 LIMITATIONS

This report is for the exclusive use of **Rockdale Water Resources,** and the designers of the project described herein, and may only be applied to this specific project. Our conclusions and recommendations have been prepared using generally accepted standards of Geotechnical Engineering practice in the State of Georgia. No other warranty is expressed or implied. Our firm is not responsible for conclusions, opinions or recommendations of others.

The right to rely upon this report and the data within may not be assigned without UNITED CONSULTING'S written permission.

The scope of this evaluation was limited to an evaluation of the depth to rock and groundwater, and load-carrying capabilities and stability of the subsoils. Oil, hazardous waste, radioactivity, irritants, pollutants, molds, or other dangerous substance and conditions were not the subject of this study. Their presence and/or absence are not implied or suggested by this report, and should not be inferred.

Our conclusions and recommendations are based upon design information furnished to us, data obtained from the previously described exploration and testing program and our past experience. They do not reflect variations in subsurface conditions that may exist intermediate of our borings, and in unexplored areas of the site. Should such variations become apparent during construction, it will be necessary to re-evaluate our conclusions and recommendations based upon "on-site" observations of the conditions.

If the design or location of the project is changed, the recommendations contained herein must be considered invalid, unless our firm reviews the changes and our recommendations are either verified or modified in writing. When design is complete, we should be given the opportunity to review the new pipeline alignment and invert location plan, grading plan, and applicable portions of the specifications to confirm that they are consistent with the intent of our recommendations.

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APPENDIX

General Notes /Narrative of Drilling Operations
Figure 1 – Boring Location Plan
Exploration Procedures
SPT Boring Logs (3)

GENERAL NOTES

The soil classifications noted on the Boring Logs are visual classifications unless otherwise noted. Minor constituents of a soil sample are termed as follows:

Trace	0 - 10%
Some	11 - 35%
Suffix "y" or "ey"	36 - 49%

LEGEND

Split Spoon Sample obtained during Standard Penetration Testing

Relatively Undisturbed Shelby Tube Sample

Groundwater Level at Time of Boring Completion

Groundwater Level at 24 hours (or as noted) after Termination of Boring

w	Natural Moisture Content	
LL	Liquid Limit	
PL	Plastic Limit	Atterberg Limits
PI	Plasticity Index	
PF	Percent Fines (Percent Passing #200 Sieve)	
γ_d	Dry Unit Weight (Pounds per Cubic Foot or PCF	
γ_m	Moist or In-Situ Unit Weight (PCF)	
γ_{sat}	Saturated Unit Weight (PCF)	

BORING LOG DATA AND NARRATIVE OF DRILLING OPERATIONS

The test borings were made by mechanically advancing helical hollow stem augers into the ground. Samples were covered at regular intervals in each of the borings following established procedures for performing the Standard Penetration Test in accordance with ASTM Specification D-1586. Soil samples were obtained with a standard 1.4" I.D. x 2.0" O.D. split barrel sampler. The sampler is first seated 6" to penetrate any loose cuttings and then driven an additional foot with the blows of a 140 pound hammer freely falling a distance of 30". The number of blows required to drive the sampler each six inches is recorded on the Boring Logs. The total number of blows required to drive the sampler the final foot is designated the "standard penetration resistance." This driving resistance, known as the "N" value, is a measure of the relative density of granular soils and is an indication of the consistency of cohesive deposits.

The Following table describes soil consistencies and relative densities based on standard-penetration resistance values (N) determined by the Standard Penetration Test.

	"N"	Consistency
	0-2	Very Soft
	3-4	Soft
	5-8	Firm
Clay and Silt	9-15	Stiff
	16-30	Very Stiff
	Over 31	Hard

	"N"	Relative Density
	0-4	Very Loose
	5-10	Loose
	11-19	Firm
Sand	20-29	Medium Dense
	30-49	Dense
	50+	Very Dense

UNITED CONSULTING *We're here for you*	N	Scale:	NTS	Notes:	Client:	ROCKDALE WATER RESOURCES
		Prepared:	EJR		Site:	GEES MILL WTP- NEW STORAGE TANK 48" WATERLINE EXTENSION
		Checked:	RIO			
		Project No.:	2016.5078.01		Title:	Boring Location Plan

FIG. 1

EXPLORATION PROCEDURES

Three (3) SPT borings (designated B-101 through B-103) performed at the approximate locations indicated on the attached Boring Location Plan (Figure 1). The SPT borings were performed in general accordance with ASTM D 1586. Soil samples obtained during testing were visually evaluated by the Project Engineer and classified according to the visual-manual procedure described in ASTM D 2488. A narrative of field operations is included in The Appendix.

The boring locations were surveyed in the field by the client prior to drilling activities. Borings were drilled at those locations flagged in the field. The locations of these borings are shown on the attached Boring Location Plan (Figure 1) and should be considered approximate. The elevations shown on the test log (if provided) were obtained from the provided topographic site plan by interpolation and should be considered very approximate. The provided elevation should not be relied upon during the design.

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BORING LOG

CONTRACTED WITH: ROCKDALE WATER RESOURCES BORING NO.: B-101
PROJECT NAME: GEES MILL WATER TREATMENT PLANT DATE: 4/22/16
JOB NO.: 2016.5078.01 DRILLER: SUNRISE DRILLING RIG: CME-45 LOGGED BY: EJR

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
730	3" TOPSOIL	0						
	Sand-some silt and clay, trace mica and rock fragments; medium dense; tan/orange (Fill)		1		8-13-9	18		
	-loose	5	2		5-4-3	18		
725								
	Sand-some silt, trace clay and mica; firm; light tan/ orange (Residual)		3		7-7-7	18		
720		10						
			4		16-50/1	5		
715	Partially weathered rock sampled as Sand-some silt, trace clay and mica; very dense; tan	15						No groundwater encountered at the time of drilling
	BORING TERMINATED AT 15 FEET							
710		20						
705		25						
700		30						
695		35						
690		40						

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BORING LOG

CONTRACTED WITH: ROCKDALE WATER RESOURCES BORING NO.: B-102
PROJECT NAME: GEES MILL WATER TREATMENT PLANT DATE: 4/22/16
JOB NO.: 2016.5078.01 DRILLER: SUNRISE DRILLING RIG: CME-45 LOGGED BY: EJR

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	3" TOPSOIL	0						
725	Sand-some silt, trace clay, mica, root hairs and wood fragments; loose; tan/orange (Fill)		1		2-3-6	18		
	Partially weathered rock sampled as Sand-some silt, trace clay and mica; very dense; tan/orange (Residual)	5	2		50/5	5		No groundwater encountered at the time of drilling
720	AUGER REFUSAL AT 4 FEET							
		10						
715								
		15						
710								
		20						
705								
		25						
700								
		30						
695								
		35						
690								
		40						
685								

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BORING LOG

CONTRACTED WITH: ROCKDALE WATER RESOURCES BORING NO.: B-103
PROJECT NAME: GEES MILL WATER TREATMENT PLANT DATE: 4/22/16
JOB NO.: 2016.5078.01 DRILLER: SUNRISE DRILLING RIG: CME-45 LOGGED BY: EJR

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
		0						
	Sand-some clay, trace silt and mica; loose; brown/tan (Fill)		1		3-4-4	18		
725	Partially weathered rock sampled as Sand-some silt, trace clay and mica; very dense; tan (Residual)	5	2		50/2	2		Hard drilling from 3 to 8.5 feet
720	AUGER REFUSAL AT 8.5 FEET	10	3		50/1	1		No groundwater encountered at the time of drilling
715		15						
710		20						
705		25						
700		30						
695		35						
690		40						

Important Information About Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.

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