

# PIEDMONT GEOTECHNICAL CONSULTANTS, INC.

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April 7, 2008

**City of Berkeley Lake**  
4040 Berkeley Lake Road  
Berkeley Lake, Georgia 30096

Attention: Mr. Tom Rozier  
City Administrator

Subject: **Proposal to Provide Preliminary  
Geotechnical Engineering Evaluation**  
Potential Seepage Area  
Berkeley Lake Dam  
Berkeley Lake, Georgia  
PGC Proposal No. P8144

Dear Mr. Rozier:

Piedmont Geotechnical Consultants, Inc. (PGC) sincerely appreciates the opportunity to assist you with the preliminary geotechnical engineering evaluation of an area of potential seepage on the downstream face of Berkeley Lake Dam. At present, we have only briefly discussed this project with you by telephone, and you have emailed me a scan of the Georgia Safe Dams Program (SDP) annual inspection for this dam performed on February 18, 2008. The Annual Inspection identified a few very minor items; the most significant issue, and the primary purpose for this proposal request was a wet area identified on the downstream slope face near the right end of the dam about mid way up the slope. This dam is a Category I (high hazard) dam regulated by the Georgia Safe Dams Program (SDP), and the annual has requested that the owner hire an Engineer of Record (EOR) to evaluate this specific area of wetness. I have also briefly discussed the annual inspection with Mr. Tom Woosley, P.E. and Mr. Chris Owen of SDP to better understand their observations. We discussed the idea of attempting to install a few shallow piezometers in hand auger borings within the general area in question. We understand that this potential seepage area is a relatively recent observation.

As we have discussed we have suggested an initial phase of geotechnical evaluation that would include a visual reconnaissance of the exposed surface features of this site, review of any available information about this dam contained in the files of the SDP and that you might provide, and attempting the installation of shallow wells as described in a few select locations. The idea for the wells would be to try and determine the level of the phreatic (free water) surface at relatively shallow depth within the area of the potential seepage to help determine if the observations are actually related to a phreatic surface through the dam that either daylight in the observed area, or exists at a shallow enough depth to be contributing to the wetness through capillary action. As we have discussed, this effort may be inconclusive if it is not practical to extend these shallow borings with hand auger techniques; in such case it may ultimately be necessary to utilize a mechanical drill rig to install adequate wells. Mechanical borings have not been included in the current scope of services or budget estimate presented.

The culmination of our initial phase of study would be a brief report of our findings and geotechnical engineering recommendations either for remediation, or for additional more detailed geotechnical evaluation. We may determine that site observations combined with information obtained from the SDP file review and the shallow well readings could result in specific recommendations for addressing any relatively minor geotechnical deficiencies without the need for any additional geotechnical design evaluation. However, it may be determined that additional geotechnical study is required to better understand the internal conditions of the dam relative to any observed deficiency. This can only be determined based on the information obtained from this initial effort.

For the outlined initial geotechnical study, we recommend a budget allocation of approximately \$4,000.00 to \$5,000.00. This should provide sufficient man-hours for our firm to review any relatively available data from SDP, perform a visual evaluation of the site, attempt the hand augered wells described, and possibly attend a meeting with you to discuss our findings and recommendations. The greatest uncertainty on our budget needs is the actual time required for available data review and for any requested meetings. All of our services are provided strictly on a unit rate basis, and the actual invoicing on the project will be based on the actual effort expended in conjunction with the attached Unit Fee Schedule. However, we would not exceed any pre-authorized budget amount without your prior review and authorization. As indicated, site specific subsurface exploration is not included in this budget estimate, but may be recommended as part of a subsequent phase of geotechnical study.

Again, we look forward to assisting you with this project. Should you have any questions about this proposal, or any of the services outlined, please do not hesitate to contact me. If you find this proposal acceptable, we ask that you execute the attached Agreement to provide us with formal authorization and proper invoicing instructions.

Sincerely,

**Piedmont Geotechnical Consultants, Inc.**

A handwritten signature in black ink that reads "Karl W. Myers". The signature is written in a cursive, flowing style.

Karl W. Myers, P.E.  
Senior Consultant

Attachments: Unit Fee Schedule  
General Conditions  
Standard Agreement for Services

Copies Submitted: Addressee (3)

<b>GEOTECHNICAL DESIGN SERVICES</b> Unit Fee Schedule
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PROJECT NAME: Berkeley Lake Dam

LOCATION: Berkeley Lake, Georgia

DATE: April 7, 2008

PROPOSAL NUMBER: P8144

I. ENGINEERING CONSULTING SERVICES

A. Staff Engineer, per hour; .....	\$ 85.00
B. Project Engineer, per hour; .....	\$105.00
C. Senior Project Engineer, per hour; .....	\$130.00
D. Senior Consultant, per hour; .....	\$165.00
E. Engineering Aide, per hour; .....	\$ 65.00
F. Draftsman, per hour; .....	\$ 57.50
G. Word Processing, per hour; .....	No Charge
H. Transportation, per mile; .....	\$ 0.60
I. Per Diem, when overnight stay required; .....	\$ 95.00
J. Other Expenses; .....	Actual Cost Plus 15%

II. FIELD DRILLING SERVICES

A. Mobilization and Demobilization of Drill Rig; .....	\$500.00
B. Soil Test Borings, N<60 bpf, per foot; .....	\$ 13.50
(Add \$1.00 per foot rotary work)	
C. Soil Test Borings, N>60 bpf, per foot; .....	\$ 15.75
(Add \$1.00 per foot rotary work)	
D. Auger Borings, per foot (no samples); .....	\$ 9.50
E. Rotary Wash Boring, per foot (no samples); .....	\$ 11.00
F. Rock Coring Set-up, each; .....	\$210.00
G. Rock Coring, per foot; .....	\$ 48.00
H. Casing for Rock Coring, per foot; .....	\$ 8.50
I. Extra Split-Spoon Samples, each; .....	\$ 24.00
J. Undisturbed Samples, each attempt; .....	\$ 96.00
K. Obtain Bulk Samples, each; .....	\$ 40.00
L. Drill Crew time, for difficult moving, stand-by, etc., per hour; .....	\$210.00
M. Drill Crew Per Diem, per day; .....	\$180.00
N. Drill Crew Packer Testing, per hour; .....	\$250.00
O. Hauling Water to Drill Hole, per day (includes water truck); .....	\$300.00
P. Expenses (including subcontract equipment); .....	Actual Cost Plus 15%
Q. Temporary Observation Wells, 2-inch PVC, including materials and labor, existing borehole, per foot; .....	\$ 30.00
R. Grouting Abandoned Boreholes, per foot; .....	\$ 18.00

III. LABORATORY TESTING

A.	Standard Proctor Compaction Test, each; .....	\$125.00
B.	Modified Proctor Compaction Test, each;.....	\$150.00
	(For Materials Requiring Replacement Gradation Add \$30.00)	
C.	Atterberg Limit Tests, each; .....	\$ 80.00
D.	Shrinkage Limits, each; .....	\$ 70.00
E.	Loss on Ignition (Organic Content), each; .....	\$ 70.00
F.	Sieve Analysis (Washed Sample Coarser Than No. 200 Sieve), each;.....	\$ 70.00
G.	Percent Finer and Coarser Than No. 200 Sieve (Wash 200), each; .....	\$ 60.00
H.	Grain Size Analysis (Sieve and Hydrometer), each; .....	\$185.00
I.	Hydrometer Analysis Only, each;.....	\$125.00
J.	Moisture Content, each; .....	\$ 16.00
K.	Tube Density, Unit Weight and Moisture Content, each; .....	\$ 70.00
L.	Relative Density Test, Dry Method, min. or max., each; .....	\$230.00
	(Wet Method Add \$30.00)	
M.	California Bearing Ratio (CBR), 3 points, each;.....	\$475.00
N.	CBR, Corps of Engineers Method (9 points), each;.....	\$1,430.00
O.	One Dimensional Consolidation Test, each; .....	\$520.00
	(To Remold Sample Add \$75.00)	
P.	Swell Pressure Test, each; .....	\$290.00
Q.	Permeability Tests, each;.....	\$370.00
	(To Remold Sample Add \$75.00)	
R.	Unconfined Compression, each;.....	\$170.00
	(To Remold or Trim Sample Add \$75.00)	
S.	Triaxial Shear Test (3 Circles), Unconsolidated-Undrained (UU, Q), each; .....	\$585.00
	(To Remold or Trim Samples Add \$225.00) .....	
T.	Triaxial Shear Test (3 Circles), Consolidated-Undrained (CU, R), natural, each;.....	\$800.00
	(To Remold or Trim Samples Add \$225.00) .....	
U.	Triaxial Shear Test (3 Circles), Consolidated-Undrained (CU saturated w/PP, R), each;.....	\$980.00
	(To Remold or Trim Samples Add \$225.00) .....	
V.	Triaxial Shear Test (3 Circles), Consolidated-Drained (CD, S), each; .....	\$1,250.00
	(To Remold or Trim Samples Add \$225.00) .....	
W.	Crumb Test, each;.....	\$ 20.00
X.	Pinhole Dispersion Test, each; .....	\$400.00

Note: Engineering Aide overtime rate is 1.5 times standard rate; includes Holidays, Weekends, work over 8 hours per day, and work before 6:00am or after 6:00pm. All charges are portal-to-portal from Roswell office except Senior Consultant from Cleveland office.

## GENERAL CONDITIONS

### SECTION 1: RIGHT OF ENTRY

1.1 The client will provide for right of entry of the geotechnical engineer and all equipment necessary in order to complete the work.

1.2 While the geotechnical engineer will take reasonable precautions to minimize damage to the property, it is understood by the client that in the normal course of work some damage may occur, the correction of which is not a part of this agreement.

### SECTION 2: UTILITIES

2.1 In the prosecution of his work, the geotechnical engineer will take all reasonable precautions to avoid damage or injury to subterranean structures or utilities. The owner agrees to hold the geotechnical engineer harmless for any damage to subterranean structures or utilities that are not called to the geotechnical engineer's attention and correctly shown on the plans furnished.

### SECTION 3: SAMPLES

3.1 The geotechnical engineer will retain all soil and rock samples for 30 days. Further storage or transfer of samples can be made at the owner's expense upon written request.

### SECTION 4: INVOICES

4.1 The geotechnical engineer will submit invoices to the client monthly and a final bill upon completion of services. Invoices will show charges for different personnel and expense classifications. A more detailed separation of charges and back-up data will be provided at the client's request.

4.2 Payment is due upon presentation of the invoice and is past due thirty (30) days from the invoice date. Client agrees to pay a finance charge of one and one-half percent (1 1/2) per month, or the maximum rate allowed by law, on past due accounts.

### SECTION 5: OWNERSHIP OF DOCUMENTS

5.1 All reports, boring logs, field notes, laboratory test data, calculations, estimates, and other documents prepared by the geotechnical engineer, as instruments of service, shall remain the property of the geotechnical engineer.

5.2 Client agrees that all reports and other work furnished to the client or his agents, which are not paid for, will be returned upon demand and will not be used by the client for any purpose whatever.

5.3 The geotechnical engineer will retain all records relating to the services performed for a period of five years following submission of the report, during which period the records will be made available to the client at all reasonable times.

## SECTION 6: DISPUTES

6.1 In the event that a dispute should arise relating to the performance of the services to be provided under this Agreement, and should that dispute result in litigation, it is agreed that the prevailing party shall be entitled to recover all reasonable costs incurred in the defense of this claim, including staff time, court costs, attorneys fees, and other claim related expenses.

## SECTION 7: STANDARD OF CARE

7.1 Service performed by the geotechnical engineer under this agreement will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty, either expressed or implied, is made.

7.2 The client recognizes that subsurface conditions may vary from those encountered at the locations where borings, survey, or explorations are made by the geotechnical engineer and that the data, interpolations and recommendations of the geotechnical engineer are based solely on the information available to him. The geotechnical engineer will be responsible for those data, interpretations, and recommendations, but shall not be responsible for the interpretation by others of the information developed.

## SECTION 8: LIMITATION OF LIABILITY

8.1 The owner agrees to limit the geotechnical engineer's liability to the owner and all construction contractors and subcontractors on the project arising from the geotechnical engineer's professional acts, errors, or omissions, such that the total aggregate liability of the geotechnical engineer to all those named shall not exceed \$50,000.00 or the geotechnical engineer's total fee for the services rendered on this project, whichever is greater. The owner further agrees to require of the contractor and his subcontractors an identical limitation of the geotechnical engineer's liability for damages suffered by the contractor or subcontractor arising from the geotechnical engineer's professional acts, errors or omissions. Neither the contractor nor any subcontractor assumes any liability for damage to others that may arise on account of the geotechnical engineer's professional acts, errors, or omissions.

## SECTION 9: INSURANCE

9.1 The geotechnical engineer represents and warrants that it and its agents, staff and consultants employed by it are protected by worker's compensation insurance and that the geotechnical engineer has such coverage under public liability and property damage insurance policies which the geotechnical engineer deems to be adequate. Certificates for all such policies of insurance shall be provided to the client, upon request in writing. Within the limits and conditions of such insurance, the geotechnical engineer agrees to indemnify and save the client harmless from and against any loss, damage, or liability arising from negligent acts by the geotechnical engineer, its agents, staff, and consultants employed by it. The geotechnical engineer shall not be responsible for any loss, damage or liability beyond the amounts, limits, and conditions of such insurance. The geotechnical engineer shall not be responsible for any loss, damage, or liability arising from any acts by client, its agents, staff, and other consultants employed by it.

## SECTION 10: TERMINATION

10.1 This agreement may be terminated by either party upon seven (7) days written notice in the event of substantial failure by the other party to perform in accordance with the terms thereof. Such termination shall not be effective if that substantial failure has been remedied before expiration of the period specified in the written notice. In the event of termination, the geotechnical engineer shall be paid for services performed to the termination notice date, plus reasonable expenses.

10.2 In the event of termination, or suspension for more than three (3) months, prior to completion of all reports contemplated by this agreement, the geotechnical engineer may complete such analyses and records as are necessary to complete his files and may also complete a report on the services performed to the date of notice of termination or suspension. The expenses of termination or suspension shall include all costs of the geotechnical engineer in completing such analyses, records, and reports.

## SECTION 11: ASSIGNS

11.1 Neither the client nor the geotechnical engineer may delegate, assign, sublet, or transfer his duties or interest in this Agreement without the written consent of the other party.

**PIEDMONT GEOTECHNICAL CONSULTANTS, INC. (PGC)  
STANDARD AGREEMENT FOR SERVICES**

This is an agreement made between \_\_\_\_\_, and PIEDMONT GEOTECHNICAL CONSULTANTS, INC., on \_\_\_\_\_. PIEDMONT GEOTECHNICAL CONSULTANTS, INC. agrees to provide services as outlined in Proposal Number P8144, dated April 7, 2008.

Services will be invoiced in accordance with the Unit Rate Fee Schedules attached. The Scope of Work outlined in the referenced Proposal, the Unit Rate Fee Schedules and General Conditions attached, and this Standard Agreement for Services will be the basis for all work performed under this agreement.

Work Authorized By:

(By) \_\_\_\_\_

Company: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Work Accepted By:



(By) \_\_\_\_\_

Company: Piedmont Geotechnical  
Consultants, Inc.

Title: Senior Consultant

Date: April 7, 2008