



January 6, 2003

Mr. Ron Purkey
Tennessee Valley Authority
1101 Market Street, LP-2G
Chattanooga, TN 37402

Subject: **Task Order Proposal for Geotechnical Exploration
Tennessee Valley Authority
Kingston Fossil Plant
Scrubber Stack Investigation
Kingston, Tennessee
MACTEC Proposal 50399-0-0000/9001**

Dear Mr. Purkey:

MACTEC Engineering and Consulting of Georgia, Inc. f/k/a Law Engineering and Environmental Services, Inc (MACTEC), hereby submits this proposal for performing a geotechnical exploration for a potential scrubber waste disposal area for the Kingston Fossil Plant. Included in this proposal are our understanding of the project requirements, our proposed scope of services, our cost estimate, and our schedule.

Project Information and Scope of Services

We were given project information by Mr. Dan Smith of Parsons, Inc. in a recent meeting and in subsequent e-mails. This information consisted of a draft statement of work and a CAD drawing of the potential disposal area.

It is our understanding that TVA is considering the development of a waste disposal area to stack scrubber waste. The potential disposal area associated with this investigation is centered roughly 4,500 feet east-southeast of the power plant. MACTEC will perform the geotechnical investigation in general accordance with the draft statement of work provided by Mr. Smith.

MACTEC Engineering and Consulting, Inc.
1725 Louisville Drive
Knoxville, TN 37921-5904
865-588-8544 • Fax: 865-588-8026

Proposed Scope of Services

Based on our understanding of your needs, we will provide the following services:

- Review of geologic maps for evidence of regional and local faults.
- Mobilize one geoprobe and one truck-mounted drill rig.
- Perform geoprobe borings for two full days to determine the depth to top of rock. The geoprobe boring locations will be distributed over the entire potential disposal area.
- Perform six soil sampling borings including standard penetration test (SPT) blow counts. Fifteen feet of NQ size rock coring would be performed at one of the six boring locations.
- Explore a potential earth fill borrow area with five auger borings drilled to a depth of approximately 20 feet.
- Backfill all borings with a cement-bentonite grout.
- Perform laboratory tests on the soil samples consisting of natural moisture content, Atterberg limits, grain size analyses and standard Proctor compaction.
- Prepare a report that contains the results of the field exploration, laboratory tests and our conclusions and recommendations.

Assumptions

MACTEC assumes the following:

- All boring and geoprobe locations will be determined by TVA at the "as-bored" locations. MACTEC will leave a stake or suitable marker at each "as-bored" location. The locations will be determined by TVA using land surveying techniques or accurate GPS methods and referenced to a suitable grid system. All boring locations will be provided to MACTEC for use in their final report.
- Mitigation of environmental concerns (if any are encountered) is not part of this work.

Cost Estimate

We have estimated the cost to perform the geotechnical exploration services to be approximately \$26,577. This projected cost was based on manpower estimates and quantities of work as presented in Table 1 (attached). The actual cost will be based on the units of work performed.

Schedule

Based on our current work load, we can begin this exploration within approximately one week of authorization to proceed. We expect the final report to be issued in less than four weeks after authorization. If desired, preliminary information can be provided upon completion of the field exploration.

Authorization

We propose to perform the requested services in accordance with the terms and conditions of our current contract. We understand that, if this proposal is acceptable to you, TVA will authorize this work by issuance of a TAO.



Mr. Purkey, we appreciate the opportunity to provide these services to TVA. If you have any questions regarding this proposal, please contact Sam Stone or Carl Tockstein at (865) 588-8544.

Sincerely,

MACTEC ENGINEERING AND CONSULTING OF GEORGIA, INC. f/k/a
LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.



Samuel D. Stone, P.E.
Corporate Consultant - Geotechnical



Carl D. Tockstein, P.E.
Chief Engineer - Tennessee Operations

SDS/CDT:sjm

Attachment

**TABLE 1 - COST ESTIMATE
KINGSTON FOSSIL PLANT - SCRUBBER GYPSUM STACK - PHASE I**

PROFESSIONAL SERVICES						
DESCRIPTION	CLASSIFICATION	HOURS	RATE	BURDEN	BILLING RATE	COST
Project Administration	Principal	4	\$38.33	\$68.99	\$107.32	\$429.30
Site Reconnaissance/ Drilling Coordination	Project Geologist	50	\$22.65	\$40.77	\$63.42	\$3,171.00
Data Analysis/ Report Preparation	Project Geologist	6	\$22.65	\$40.77	\$63.42	\$380.52
Site Reconnaissance/ Drilling Coordination	Principal	0	\$38.33	\$68.99	\$107.32	\$0.00
Geoprobe Borings/Data Analysis/ Report Preparation	Staff Engineer I	48	\$22.65	\$40.77	\$63.42	\$3,044.16
Site Recon/Data Analysis/ Report Preparation	Senior Engineer	36	\$31.71	\$57.08	\$88.79	\$3,196.37
Data Analysis/ Report Preparation	Principal Engineer	2	\$38.33	\$68.99	\$107.32	\$214.65
Data Analysis/ Report Preparation	Corporate Consultant	4	\$48.78	\$87.80	\$136.58	\$546.34
Data Analysis/ Report Preparation	Word Processor	4	\$10.45	\$18.81	\$29.26	\$117.04
Data Analysis/ Report Preparation	Draftsperson	6	\$12.20	\$21.96	\$34.16	\$204.96
SUBTOTAL LABOR						\$11,304.33
ADDITIONAL CONSULTATION						
DESCRIPTION						
Consultation with the design team	Senior Engineer	2	\$31.71	\$57.08	\$88.79	\$177.58
Consultation with the design team	Principal	2	\$38.33	\$68.99	\$107.32	\$214.65
SUBTOTAL ADDITIONAL CONSULTATION						\$392.22
TRAVEL EXPENSES (PROFESSIONAL)						
DESCRIPTION	UNIT	QUANTITY	RATES	COST		
Expenses(including transportation to and from site, etc.)	each	1	\$150.00	\$150.00		
SUBTOTAL TRAVEL EXPENSES						\$150.00
DRILLING SERVICES						
ITEM	UNIT	QUANTITY	RATES	COST		
Mobilization and demobilization of Geoprobe drill rig	each	1	\$232.00	\$232.00		
Mobilization and demobilization of ATV Mounted drill rig	each	1	\$330.00	\$330.00		
Mobilization and demobilization of Support Truck	each	2	\$66.00	\$132.00		
Auger boring in overburden, 4 1/4" id., 0-25 ft	ft	250	\$6.25	\$1,562.50		
Auger boring in overburden, 4 1/4" id., 25-50 ft	ft	150	\$6.75	\$1,012.50		
Auger boring in overburden, 4 1/4" id., 50-100 ft	ft	60	\$7.50	\$450.00		

**TABLE 1 - COST ESTIMATE
KINGSTON FOSSIL PLANT - SCRUBBER GYPSUM STACK - PHASE I**

Standard Penetration test in conjunction with boring	each	90	\$20.00	\$1,800.00
Undisturbed sample 3 inch Shelby tube	each	0	\$60.00	\$0.00
Rock coring, NQ size, vertical hole - less than 50 feet deep	ft	0	\$35.00	\$0.00
Rock coring, NQ size, vertical hole - 50 to 100 feet deep	ft	15	\$38.00	\$570.00
Coring setup charge	each	1	\$100.00	\$100.00
DRILLING SERVICES				
ITEM	UNIT	QUANTITY	RATES	COST
Grouting with cement Bentonite grout - 6" dia or less	ft	475	\$5.50	\$2,612.50
Rock core boxes	each	2	\$12.00	\$24.00
Time rate for drill crew for collection and disposal of drill waste	hr	2	\$150.00	\$300.00
Time rate for drill crew for water hauling	hr	2	\$150.00	\$300.00
ATV Drill	da	5	\$100.00	\$500.00
Geoprobe Drill	da	2	\$1,000.00	\$2,000.00
Water pump	da	2	\$50.00	\$100.00
Grout Plant	da	2	\$250.00	\$500.00
Support Truck	da	10	\$35.00	\$350.00
Water Tank	da	2	\$100.00	\$200.00
Cell Phone	da	5	\$10.00	\$50.00
Crew daily trip charge to and from site	da	7	\$75.00	\$525.00
Per diem and lodging in accordance with TVA allowances	da	0	\$0.00	\$0.00
SUBTOTAL DRILLING				\$13,650.50
LABORATORY SERVICES				
ITEM	UNIT	QUANTITY	RATES	COST
Natural (Jar) Moisture Content	each	20	\$8.00	\$160.00
Atterberg Limits	each	6	\$65.00	\$390.00
Sieve Analysis wash 200	each	6	\$45.00	\$270.00
Standard Proctor Compaction	each	2	\$130.00	\$260.00
	each	0	\$0.00	\$0.00
	each	0	\$0.00	\$0.00
	each	0	\$0.00	\$0.00
	each	0	\$0.00	\$0.00
	each	0	\$0.00	\$0.00
	each	0	\$0.00	\$0.00
SUBTOTAL LABORATORY				\$1,080.00
				\$0.00
TOTAL PROJECT				\$26,577.05