1. PROPOSER COVER SHEET
(INCLUDE AS PART OF RESPONSE UNDER TAB 1)

Section A. Proposer Information

Legal Name: Ardaman & Associates, Inc.	
Main Administrative Address: 316 Highlandia Drive	
City & State: Baton Rouge, LA	Zip Code: 70810
Telephone Number: 225.752.4790	Fax Number: 225.752.4790
E-mail Address: rjewell@ardaman.com	Web Site: www.ardaman.com
CEO/Executive Officer: Mohammad Al-Hawaree	Office Phone Number: 407.855.3860
Chief Financial Officer: John Garlinger	Office Phone Number: 407.855.3860
Contact Person's Name: Robert Jewell	Phone Number Including Area Code: 225.752.4790
Mailing Address, City, State, Zip Code, Email: 316 Highlandia Drive, Baton Rouge, LA 70810	
Type of Entity (check all that apply): [X]Private-for-Profit Entity [ ]Nonprofit	

Section B. Certification of Accuracy and Compliance

I do hereby certify that all facts, figures, and representations made in the Proposal Response(s) are true and correct. Furthermore, all applicable statutes, terms, conditions, regulations, and procedures for program compliance and fiscal control, including but not limited to, those contained in the Proposal Package will be implemented to ensure proper accountability of contracts. I have been duly authorized to act as the representative for this Proposal.

Robert Jewell	Branch Manager / Assistant Vice-President
Print Authorized Official's Name	Authorized Official's Title
	November 6, 2020
Authorized Official's Signature	Date

Figure 1

2. TRANSMITTAL LETTER

November 20, 2020

Geotechnical Data Collection and Sediment Sampling Services
for University Lakes Project

Submitted To:
University Lakes, LLC
Attn: Project Advisor
B&D / CSRS
lakesinfo@csrsinc.com

Submitted By:
Ardaman & Associates, Inc.

Ardaman's contact during this RFQ:
Robert Jewell
Branch Manager
225-752-4790
RJewell@Ardaman.com
316 Highlandia Drive, Baton Rouge, LA 70810

Ardaman's authorized contract signee:
Robert Jewell
Branch Manager
225-752-4790
RJewell@Ardaman.com
316 Highlandia Drive, Baton Rouge, LA 70810

We acknowledge receipt of Addenda # 1 & 2

Enclosed with this Transmittal are the following items:
(1) Technical Proposal

Sincerely,
Ardaman & Associates, Inc.

Robert Jewell, P.E.
Contract Manager

3. TABLE OF CONTENTS

4. ORGANIZATIONAL BACKGROUND AND OVERVIEW

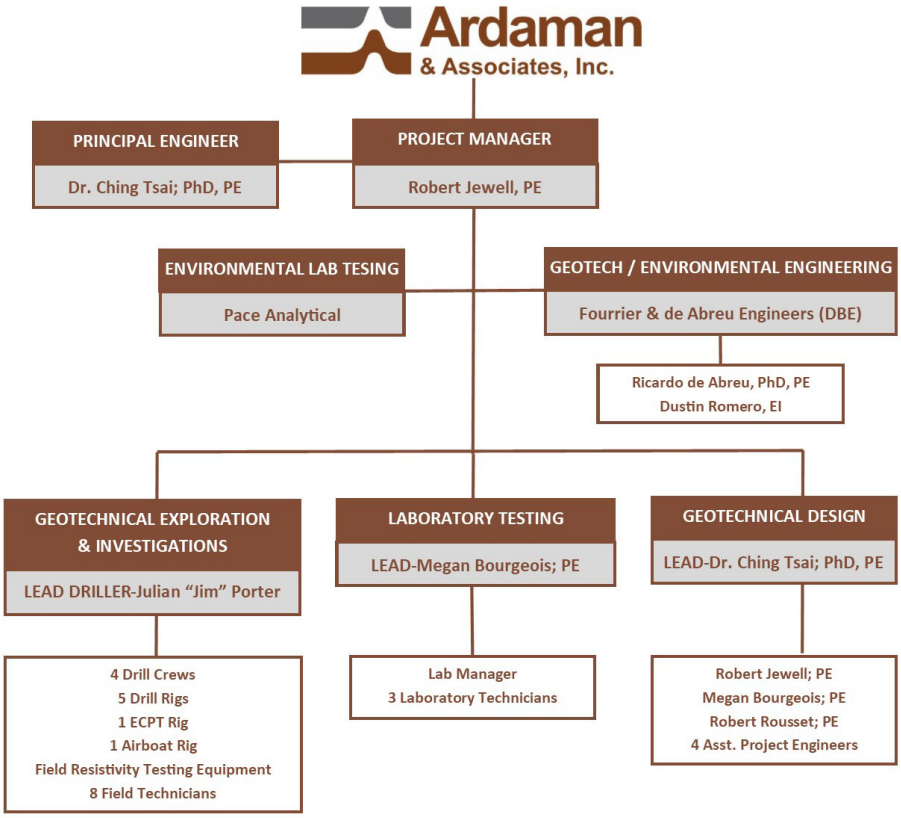
Ardaman & Associates, Inc. (Ardaman) specializes in geotechnical engineering consulting including field and laboratory investigations, foundation evaluation and design, geotechnical performance monitoring, and construction quality assurance inspection and testing. Ardaman maintains offices in Baton Rouge, New Orleans, Shreveport, and Monroe, Louisiana. For this project, project management, drilling, laboratory testing, and engineering will occur in the Baton Rouge office. Any additional resources needed will also be supported from our New Orleans, LA and Orlando, FL offices.

Ardaman has conducted geotechnical exploration and investigations for data collection, sediment sampling, levees, coastal restoration, marsh restoration, retention ponds, highways, roads, bridges, and structures of all kinds for many decades. From public service projects, to private, commercial, and industrial structures, our quality work is part of the reason our projects and any of the structures built on them remain in service today.

Our Louisiana operations boast a staff of 63 professionals and support personnel and perform a wide variety of geotechnical investigations each year throughout the state. Virtually all these investigations include soil borings, field tests, laboratory tests, geotechnical engineering analyses, and report preparation. Our field and laboratory staff, working under the direction of experienced professional engineers are adept in sampling and testing the soils unique to Louisiana and are knowledgeable of Federal, State, and local standards for geotechnical field exploration and laboratory testing standards and protocols. The Baton Rouge office is under the direct supervision of Robb Jewell and Megan Bourgeois.

Ardaman & Associates, Inc. has a reputation for personal and professional integrity and competence. Ardaman believes that the growth and reputation of their company are the direct results of the individual efforts and commitment of all of its employees. The success of Ardaman depends on continuing this commitment and adhering to the highest professional standards and ideals. Ardaman is professionally and uniquely qualified for this contract. We have on staff in Louisiana a total of 16 civil engineers, eleven of those are Professional Engineers registered in the State of Louisiana with specialized training and experience in geotechnical engineering. Seven of Ardaman's Louisiana engineers hold advanced degrees in Civil Engineering (MSCE or equivalent) with four of those engineers holding a doctorate degree. Our staff has performed numerous projects for the City of Baton Rouge and LSU under retainer contracts, direct contracts, and as a subconsultant. We are committed to providing East Baton Rouge and LSU with the highest quality of professional and technical services with constant commitment to the health and safety of the design team, contractors, owners, and the public. We have considerable experience managing and working on projects of this nature.

Our geotechnical testing laboratories are operated under a certified quality assurance system implemented and maintained by engineers serving as on-site QA officers. All laboratory data is subject to quality control checks and is then processed electronically to generate soil boring logs and gINT database files. Each laboratory location is individually validated and/or certified by various accrediting bodies such as AASHTO, Louisiana Dept. of Environmental Quality (LADEQ) - LELAP, and the US Army Corps of Engineers (USACE).



5. FIRM AND KEY STAFF EXPERIENCE

Ardaman & Associates, Inc. provides unique qualifications and experience, and readily meets or exceeds all the requirements outlined for the geotechnical aspects of this project. Ardaman was established in 1959 and specializes in geotechnical investigations, foundation engineering, construction materials testing, and consulting. The laboratories are equipped to run associated soils mechanics tests. Ardaman routinely provides a wide range of services including:

- ✓ Soil Classification test;
- ✓ Grain Size test;
- ✓ Strength test;
- ✓ Consolidation test;
- ✓ Data interpretation and design soil parameter selection;
- ✓ Soil profiles & general site geology;
- ✓ Shallow foundation analyses (bearing capacities, settlement, and installation);
- ✓ Roadway design analyses;
- ✓ Deep foundation analyses (pile and shaft capacities, settlement, and installation);
- ✓ Slope stability analyses (levees, dikes, channels, earthen structures, revetments, and excavations);
- ✓ Settlement estimates (consolidation settlement and time-rate) and monitoring (settlement plates and vibrating wire settlement cells);
- ✓ Sheet pile wall analyses (cantilever, single brace, multiple brace);
- ✓ Earth retaining structure & floodwall analyses;
- ✓ Erosion protection recommendations;
- ✓ Fill and borrow source evaluations;
- ✓ Earth pressure calculations;
- ✓ General construction procedures & recommendations;
- ✓ Construction materials testing and inspection

Field investigation services routinely provided by Ardaman include:

- ✓ Undisturbed, Standard Penetration Test (SPT), and grab sampling;
- ✓ Vibracore and soft sediment sampling'
- ✓ Auger drilling and rotary wash drilling;
- ✓ Fixed piston sampling;
- ✓ Piezometer and monitor well installation;
- ✓ Electrical resistivity testing;
- ✓ Field vane shear testing;
- ✓ Cone penetrometer testing's (CPT)

Ardaman & Associates, Inc.
Projects

EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	EXAMBLE PROJECT KEY NUMBER 1

. TITLE AND LOCATION *(City and State)*	SCOPE OF WORK	
Tchefuncte River Lighthouse Habitat and Shoreline Protection Madisonville, LA	PROFESSIONAL SERVICES Geotechnical Investigation & Engineering	CONSTRUCTION *(If applicable)* Construction Oversight

PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER Digital Engineering & Imaging, Inc.	b. POINT OF CONTACT NAME Andrew Woodroof	c. POINT OF CONTACT TELEPHONE NUMBER 504-468-6129

BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Ardaman performed a geotechnical investigation for this project. The project included enhancing and preserving the shoreline and habitat surrounding of the Tchefuncte River lighthouse. Project construction consisted of approximately 400 linear ft. long breakwater to the existing lighthouse peninsula, a 600 linear ft. long bulkhead along the three sides (previously protected by rip-rap) of the peninsula protected, along with a 220 linear ft. long pier structure to serve as an on- and off-loading area for pedestrians visiting the lighthouse by boat, extending from the peninsula. Ardaman provided two alternatives to be considered for the alignment of the breakwater.

The study included drilling soil test borings to determine subsurface conditions and stratification and the performance of soil mechanics laboratory tests on samples obtained from the borings to evaluate their physical characteristics. Ardaman's engineers then performed geotechnical analyses based on the borings and test data to develop criteria used in the breakwater, bulkhead, and pier design.

The field explorations were drilled in the vicinity of the proposed project structures were drilled to depths of 30 ft. below the existing mudline along the existing rip-rap shoreline of the lighthouse peninsula and in the area of the proposed bulkhead, as well as, in the general area of the proposed breakwater and dock structures. The boring and sampling operations were performed with a barge-mounted drill rig.

The purpose of the proposed breakwater is to dissipate wave energy that would otherwise reach the lighthouse peninsula shoreline. Ardaman provided the global stability, bearing capacity, and settlement analyses performed for the breakwater structure. Geotechnical engineering analyses were made to estimate the bearing capacity of the bottom surface soils in the area of the proposed breakwater. Analyses were also made based on the soil borings and the laboratory test results to estimate the load carrying capacities of several lengths of treated timber piles.

Cost: >$23,000

EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	EXAMBLE PROJECT NUMBER 2

TITLE AND LOCATION *(City and State)*	SCOPE OF WORK	
Woodlawn Plantation Dam St. Francisville, LA P1701-1205	PROFESSIONAL SERVICES Geotechnical Investigation & Engineering	CONSTRUCTION *(If applicable)* N/A

PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER Mike Wampold III	b. POINT OF CONTACT NAME Mike Wampold III	c. POINT OF CONTACT TELEPHONE NUMBER Upon Request

BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Ardaman performed geotechnical investigation, laboratory testing, and geotechnical engineering services and presented our evaluations and conclusions for this project that consisted of the construction of one 3,900 foot dam to create an approximately 30-acre recreation lake at Woodlawn Plantation in St. Francisville, LA.

The field investigation consisted of two parts: geotechnical sampling and geophysical testing using electrical resistivity survey. We performed soil borings along the proposed dam alignment. In addition, soil borings were taken within the lake area to evaluate the borrow source and the leakage potential.

A few borings were converted to piezometers to measure the groundwater level and determine the groundwater flow direction. Subsurface profile was determined using electrical resistivity testing at two locations along the proposed dam.

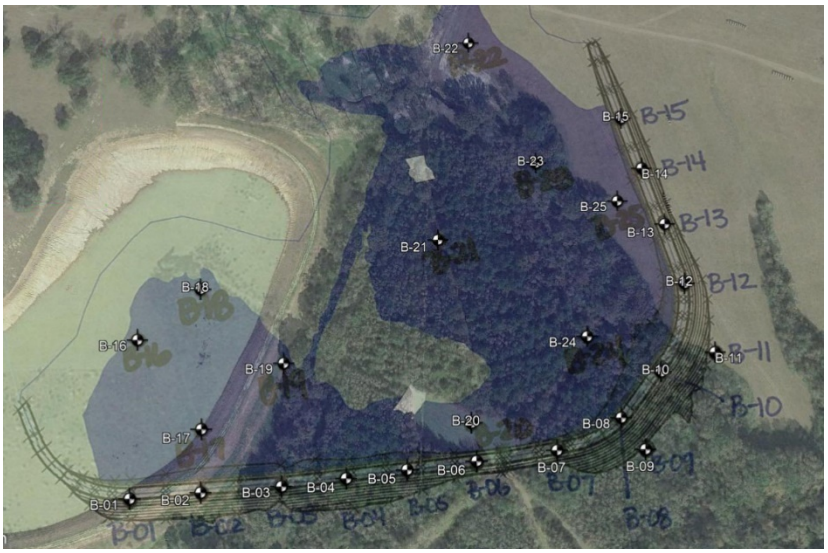
Geotechnical laboratory testing was performed on selected samples collected during the field investigation. All geotechnical tests were performed in accordance with the appropriate AASHTO and ASTM standards. In general, the laboratory testing program consisted of the following:

- Compressive strength testing;
  - Unconfined compression tests
  - Unconsolidated-undrained triaxial tests
  - Consolidated undrained triaxial tests
- Classification testing (Atterberg limits, sieve analyses, etc.);
- Dispersivity tests (crumb, double hydrometer and pin-hole);
- Moisture content testing;
- Permeability testing;
- Compaction tests; and
- Other tests

Ardaman's scope of work included engineering services consisting of:

- Soil boring logs containing laboratory results;
- Electrical resistivity survey results;
- A fence diagram showing the soil conditions along the dam alignment;
- Results of geological research and seismic potential for published information;
- Evaluation of soil dispersive potential and potential remedial measures, if required;
- Preliminary seepage analysis through the earthen dam and lake bottom;
- Slope stability analysis for S, Q and rapid drawdown cases at three cross sections

Cost: >$77,850



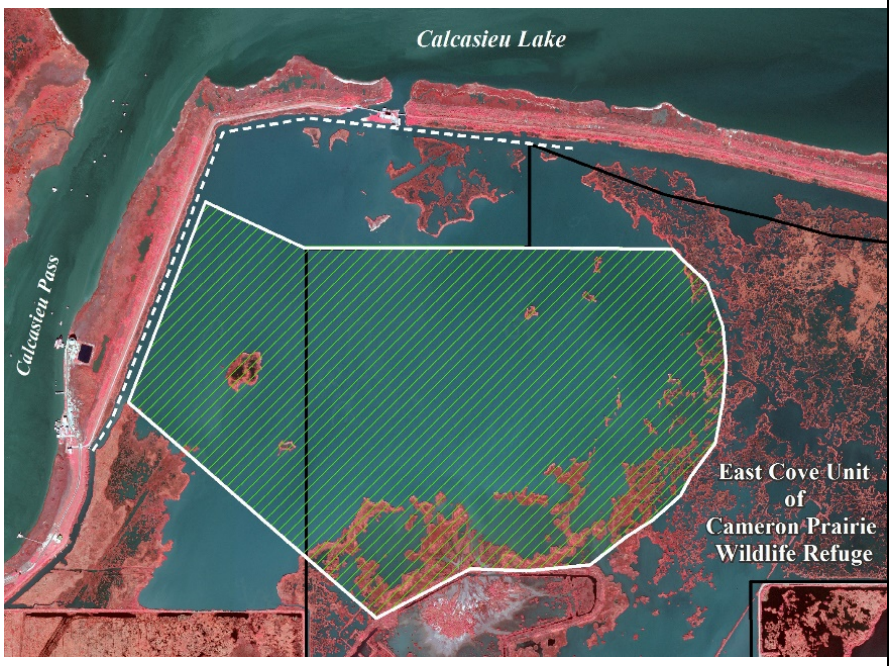
EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	EXAMBLE PROJECT KEY NUMBER 3

TITLE AND LOCATION *(City and State)*	SCOPE OF WORK	
No Name Bayou Marsh Creation & Nourishment (CS-0078) 113-16-84-2844 113-16-84-2844A 113-19-84-2853 Cameron Parish, LA 15-2878	PROFESSIONAL SERVICES Geotechnical Investigation & Engineering	CONSTRUCTION *(If applicable)* Construction Oversight

PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER Coastal Protection & Restoration Authority (CPRA)	b. POINT OF CONTACT NAME Travis Byland	c. POINT OF CONTACT TELEPHONE NUMBER 225-342-6750

BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

The No Name Bayou Marsh Creation and Nourishment project create approximately 533 acres of marsh (including tidal creeks and ponds) to be nourished by hydraulically dredged material. It is currently proposed that the source of this material will originate from Calcasieu Lake, located just north of the marsh creation area. The fill area will be confined by earthen containment dikes to be constructed around the perimeter of the marsh creation area. Following completion of filling, the marsh creation area will be planted with wetland vegetation to re-establish plant productivity. Additionally, the project may include cleaning out over 8,600 linear feet of canals to re-establish drainage patterns which were filled in due to tropical storms.



The project has been through a few phases, the first of which consisted of a data gap and feasibility study, a subsurface investigation of the marsh creation area and proposed borrow area, and now an alternative borrow area has been established. Ardaman has worked with CPRA from the data gap and feasibility study phase, and continues to provide engineering design recommendations for the project.

Ardaman performed the field sampling effort for this project, which included performing soil borings from a pontoon spud barge in Lake Calcasieu, and a marsh buggy in the USACE CDF, and an airboat within the proposed marsh creation area. Undisturbed samples were transported to our New Orleans Laboratory for testing and further evaluation.

Cost: >$481,000

EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	EXAMBLE PROJECT KEY NUMBER 4

TITLE AND LOCATION *(City and State)*	SCOPE OF WORK	
Cole's Bayou Marsh Restoration, (TV-63) 113-13-80-3705 Vermillion Parish, LA	PROFESSIONAL SERVICES Geotechnical Investigation & Engineering	CONSTRUCTION *(If applicable)* Construction Oversight

PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER Coastal Protection & Restoration Authority (CPRA)	b. POINT OF CONTACT NAME Vida Carver, P.E.	c. POINT OF CONTACT TELEPHONE NUMBER 225-342-7308

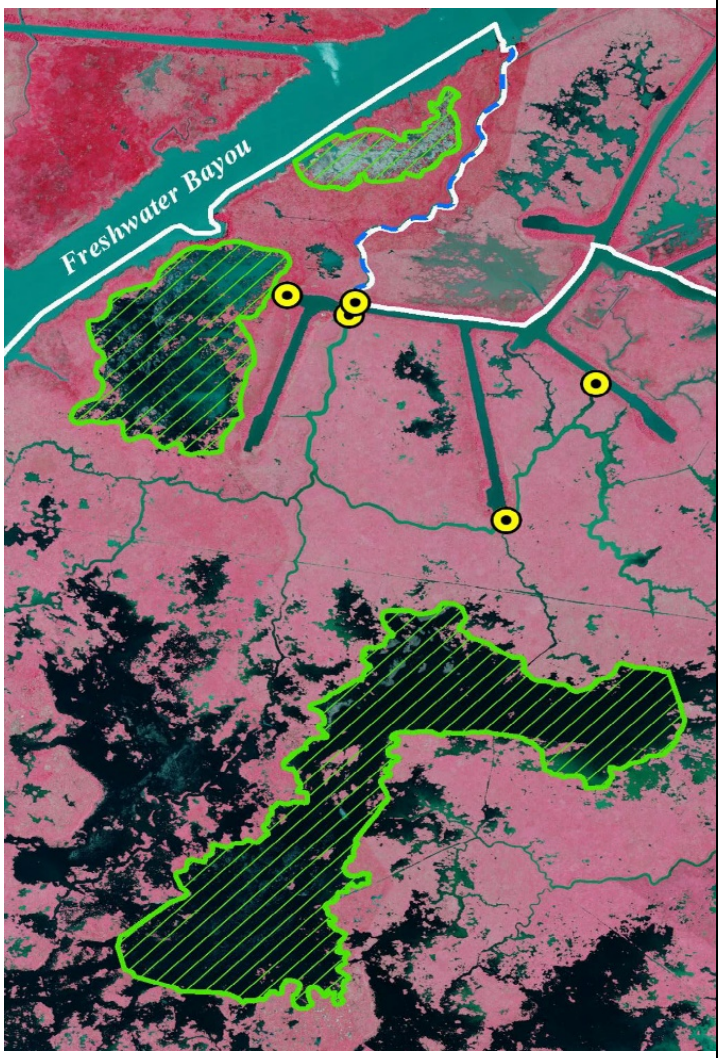
BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

The Cole's Bayou Marsh Restoration project will consist of the creation of approximately 365 acres of brackish marsh, the nourishment of approximately 53 acres of existing brackish marsh, and the increase of freshwater and sediment inflow into the project area. This will yield approximately a net 398 acres of new brackish marsh area over the intended 20-year design life of the project. This will be achieved by hydraulically dredging material from nearby Little Vermillion bay and pumping it into designated fill areas that will be bounded by earthen dikes. The Cole's Bayou Marsh Restoration project will consist of the creation of approximately 365 acres of brackish marsh, the nourishment of approximately 53 acres of existing brackish marsh, and the increase of freshwater and sediment inflow into the project area. This will yield approximately a net 398 acres of new brackish marsh area over the intended 20-year design life of the project. This will be achieved by hydraulically dredging material from nearby Little Vermillion bay and pumping it into designated fill areas that will be bounded by earthen dikes.

Ardaman's scope of work associated with the field and laboratory data collection phase of this project consisted of performing a total of 26 soil borings (B-01 through B-26) to depths ranging from 20 to 80 feet below the existing mudline at locations established by the CPRA.

Following the field investigation and laboratory testing, engineering analyses were performed with regard to earthen containment dike levee and terrace design that included containment dike analysis, marsh fill area, and containment dike time to settle to average marsh elevation. Recommendations included maximum construction elevation, acceptable side slopes, acceptable crown widths, consolidation during construction, settlement curves, slope stability analysis, cut/fill ratio for construction, and construction sequencing recommendations.

Cost: >$335,000



Subconsultant:
Fourrier & de Abreu Engineers
Projects

EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	EXAMBLE PROJECT KEY NUMBER 1

TITLE AND LOCATION *(City and State)*	SCOPE OF WORK	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Cell VII Stage 5 & Sedimentation Pond No. 3 - Final Design & Construction Oversight Mansfield, LA	Geotechnical Engineering Consultant	Construction Oversight

PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
DeSoto Parish Police Jury	Steven Brown, P.E., F.NSPE, CAO	318-872-0738

BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

Fourrier & de Abreu Engineers, LLC (FDAE) provided geotechnical sample collection, analysis and final design of the landfill grading plan, clay liner, geosynthetic liners, leachate collection and removal system, protective layer, and levees. We prepared cost estimates and bid package. FDAE oversaw bidding, awarding, construction, geotechnical/liner testing, Construction Quality Assurance (CQA) services (including field sampling and lab geotechnical testing), construction surveying, and certification reporting.

FDAE prepared the Final design, bid package preparation, construction oversight, geotechnical field sample collection and testing, geotechnical laboratory testing, and LDEQ certification reporting.

Cost: >$300,000

EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	EXAMBLE PROJECT KEY NUMBER 2

TITLE AND LOCATION *(City and State)*	SCOPE OF WORK	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Jefferson Parish Sanitary Landfill - Cell 24 South Final Design & Construction Oversight Avondale, LA	Geotechnical Engineering Consultant	Construction Oversight

PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
Waste Connections, Inc.	Mr. Matt Crockett, P.E.	832-422-2913

BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

FDAE provided geotechnical sampling, analysis, and final design of the landfill grading plan, underdrain system, clay liner, geosynthetic liners, leachate collection and removal system, protective layer, and levees. Prepared cost estimates and bid package. FDAE oversaw bidding, awarding, construction, geotechnical/liner testing, Construction Quality Assurance (CQA) services (including field sampling and lab geotechnical testing – moisture content determinations, Atterberg Limits, hydraulic conductivity tests, sieve analysis, and Standard Proctor Compaction tests), construction surveying, and certification reporting.

Cost: >$200,000

EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	EXAMBLE PROJECT KEY NUMBER 3

TITLE AND LOCATION *(City and State)*	SCOPE OF WORK	
Tangipahoa Parish Regional Solid Waste Facility - Permit Modification for 50-acre Expansion, Final Design & Construction Oversight Independence, LA	PROFESSIONAL SERVICES Geotechnical Engineering Consultant	CONSTRUCTION *(If applicable)* Construction Oversight

PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER Tangipahoa Parish Government	b. POINT OF CONTACT NAME Mr. Andy Currier	c. POINT OF CONTACT TELEPHONE NUMBER 985-748-3211

BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

FDAE provided geotechnical sample collection and analysis and final design of the landfill grading plan, clay liner, geosynthetic liners, leachate collection and removal system, protective layer, and levees. Prepared cost estimates and Public Works bid package. FDAE oversaw bidding and awarding and is currently overseeing construction, providing geotechnical/liner testing, Construction Quality Assurance (CQA) services (including field and lab geotechnical testing – moisture content determinations, Atterberg Limits, hydraulic conductivity tests, sieve analysis, and Standard Proctor Compaction tests), construction surveying, and certification reporting. FDAE was also responsible for the preparation of the solid waste permit modification application to increase the permitted capacity of the landfill and expand the facility through Type II cells (Cells 13 through 16) in a new "grassroots" area. Firm was responsible for entire permit application, design, Construction Quality Assurance, and certification reporting.

Cost: >$300,000

EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT	EXAMBLE PROJECT KEY NUMBER 4

TITLE AND LOCATION *(City and State)*	SCOPE OF WORK	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Baton Rouge Metropolitan Airport – Airport Pavement Strength (PCN) Report Phase II Baton Rouge, LA	Geotechnical Engineering Consultant	NA

PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
Baton Rouge Metropolitan Airport	Michael Hixon	225-572-9855

BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost)

FDAE was a subconsultant to Infrastructure Consulting & Engineering for this project. FDAE provided field geotechnical sampling and borings, laboratory geotechnical testing, and geotechnical engineering for the design of pavement for the airport. Seven soil borings and Dynamic Cone Penetration tests (DPCT's) were performed for this project, which provided general subgrade categories, CBR values, and modulus of subgrade reaction values for rigid and flexible pavements.

Cost: $12,000

Ardaman & Associates
Resumes

Brief résumé of key project personnel anticipated to work on this contract.	
a. Name and domicile Megan Bourgeois, PE / Assistant Branch Manager Baton Rouge, LA	b. Title/ Engineering area of expertise Project Engineer & Laboratory QA Officer / Geotechnical Engineering
c. Name of firm by which employed full time Ardaman & Associates, Inc.	d. Years' experience: With this firm: 14 With other firms: 0
e. Education: Degree(s) / Years / Specialization B.S., 2006, Civil Engineering (LSU)	f. Active registration number / state / expiration date: 36725 / LA / 03/31/2022

g. Contract role(s) / brief description of responsibilities:

Ms. Bourgeois is an experienced geotechnical engineer. She has experience with shallow foundations, pile and drilled shaft foundations, LRFD pile design, slope stability, pipeline and pump station recommendations, and pavement design. She has served as the contract administrator for Louisiana DOTD Retainer contracts that have included projects for bridges and roadways throughout Louisiana including projects in the coastal region. She manages geotechnical investigations, including subsurface investigation, assignment of laboratory tests, and completion of engineering soils analyses to provide a final report. Ms. Bourgeois also serves as the Quality Assurance Officer for our geotechnical laboratory in Baton Rouge.

h. Other experience and qualifications **relevant to the proposed project**:

No Name Bayou Marsh Creation & Nourishment (CS-78), Cameron Parish, LA (Ongoing) Project Engineer/Lab QA Officer. The No Name Bayou Marsh Creation and Nourishment project will create approximately 502 acres of marsh, 10 acres of creeks/ponds and nourish 21 acres of existing marsh. Marshland will be created and nourished by hydraulically dredging select fill material and placing it within the marsh creation area, which will have earthen containment dikes around the perimeter in order to keep this material in place as it settles out of suspension and rebuilds land. Ms. Bourgeois served as a project engineer and provided oversight of the laboratory testing program for this project.

Louisiana Living Shoreline Demonstration, St. Bernard Parish, LA, CPRA (c/o Tetra Tech, Inc.), (Ongoing) Project Engineer/Lab QA Officer. Ardaman serves as the geotechnical consultant for this project. The goal is to establish a living shoreline in the defined project area to serve as a first line of defense to aid in the prevention and reduction in the rate of erosion of the coastal marshes that sustain the Lower Biloxi Marsh. Ms. Bourgeois served as project engineer in charge of quality assurance of the extensive laboratory testing program for this project.

Front Ridge Chenier Terracing, Coastal Louisiana Phase I Engineering & Design (TV-60) (Sept 2012), Vermillion Parish, LA Project Engineer/Lab QA Officer. A CDBG-funded project stretching along the south side of Front Ridge Road 1.6 miles, the objective is to create terracing to reduce wave fetch, reestablish emergent marsh and prevent further deterioration to the shoreline of the Front Ridge community. Ms. Bourgeois served as a project engineer and provided oversight of the extensive laboratory testing program for this project. She assisted in development of a modified consolidation testing procedure in order to capture more refined consolidation curves necessary in accurately modeling the settlement behavior of the sensitive materials for this project.

Cole's Bayou Marsh Restoration, (TV-63) (Feb 2013), Vermillion Parish, LA Project Engineer. The Cole's Bayou Marsh Restoration project consists of the creation of approximately 365 acres of brackish marsh, the nourishment of approximately 53 acres of existing brackish marsh, and the increase of freshwater and sediment inflow into the project area. Ms. Bourgeois served as principal quality assurance engineer over report development and analyses. She also assisted in development of soil characterization profiles used in design.

Oyster Bayou Marsh Restoration (CS-59), Cameron Parish, LA (Aug 2012) Project Manager. Project Engineer/Lab QA Officer. Approximately 510 acres of marsh will be created, and 90 acres will be nourished by hydraulically dredging material from the Gulf of Mexico and pumping it to the designated fill area. Also, approximately 14,140 LF of earthen terraces will be constructed and planted. Ms. Bourgeois served as a project engineer and provided oversight of the laboratory testing program for this project. She assisted in development of project-specific procedures for performing slurry consolidation tests on the proposed dredge materials for this project.

Madison Bay Marsh Creation & Terracing, Terrebonne Parish, LA (TE-51) (Sept 2012) Project Engineer. The Madison Bay Marsh Creation and Terracing project (Alternative I) consists of the creation of approximately 450 acres of emergent marsh with material hydraulically dredged from Madison Bay and the construction of approximately 50,000 linear feet of earthen terraces throughout the proposed project area. Ms. Bourgeois served as quality assurance engineer over report development and analyses. She also assisted in development and presentation of the final project update.

Brief résumé of key project personnel anticipated to work on this contract.	
a. Name and domicile Robert Jewell, PE / Branch Manager Baton Rouge, LA	b. Title/ Engineering area of expertise Project Engineer / Geotechnical Engineering
c. Name of firm by which employed full time Ardaman & Associates, Inc.	d. Years' experience: With this firm: 13 With other firms: 0
e. Education: Degree(s) / Years / Specialization B.S., 2009, Civil Engineering (LSU)	f. Active registration number / state / expiration date: 38579 / LA / 09/30/2020

g. Contract role(s) / brief description of responsibilities:
Along with managing the Baton Rouge branch, Mr. Jewell manages projects for various geotechnical engineering services with an emphasis on deep and shallow foundation design, construction quality assurance, and testing, including PDA. He also served as Project Engineer for several of the coastal restoration and protection projects Ardaman conducted for CPRA.

h. Other experience and qualifications **relevant to the proposed project**:

Houma Navigation Canal Lock Complex, Geotechnical Investigation, Terrebonne Parish, LA (2015 - Ongoing)- Project Engineer. Mr. Jewell assisted in performing GRL WEAP analyses for various pile foundation types**.**

Rabbit Island Restoration Project, Cameron Parish, LA (2014) Project Manager. Project consists of the restoration of approximately 200 acres of pelican nesting habitat in south-central Cameron Parish using hydraulically dredged material from a nearby borrow site within the Calcasieu Ship Channel. Mr. Jewell coordinated and managed the field crew to complete the geotechnical field investigation. He also performed internal technical review of design analyses and reports.

Madison Bay Marsh Creation & Terracing (TE-51), Terrebonne Parish, LA, CPRA (2012) Project Engineer. The Madison Bay Marsh Creation and Terracing project (Alternative I) consists of the creation of approximately 450 acres of emergent marsh with material hydraulically dredged from Madison Bay. Ardaman initially conducted 9 borings to a depth of 60 feet and 7 borings to a depth of 40 feet utilizing an airboat-mounted drill rig with GPS data collected for each boring location. Ardaman also performed the laboratory tests (undrained shear strength, classification, and consolidation tests) in accordance with ASTM standards. Engineering analyses were performed with regard to earthen containment levee and terrace design that included containment dike analysis, containment dike time to settle to average marsh elevation, and terracing analysis. Recommendations included maximum construction elevation, acceptable side slopes, acceptable crown widths, consolidation during construction, settlement curves, slope stability analysis, cut/fill ratio for construction, and construction sequencing. Mr. Jewell assisted with design analyses for the project.

Cole's Bayou Marsh Restoration, (TV-63), Vermillion Parish, LA (Feb 2013) Project Engineer. The Cole's Bayou Marsh Restoration project consists of the creation of approximately 365 acres of brackish marsh, the nourishment of approximately 53 acres of existing brackish marsh, and the increase of freshwater and sediment inflow into the project area. Mr. Jewell served as Project Engineer and performed internal technical review of design analyses and reports.

Oyster Bayou Marsh Restoration (CS-59), Cameron Parish, LA (Aug 2012) Project Engineer. Approximately 510 acres of marsh will be created, and 90 acres will be nourished by hydraulically dredging material from the Gulf of Mexico and pumping it to the designated fill area. Also, approximately 14,140 LF of earthen terraces will be constructed and planted. Mr. Jewell served as Project Engineer and performed internal technical review of design analyses and reports.

LA 1 – Phase 1, Lafourche Parish, LA, SP No. 700-29-0112, (2003 – 2011) Onsite Project Engineer. Mr. Jewell served in the field as geotechnical engineer for this long-term project in coastal Louisiana. He was on-site 24 hours for a rotating shift of 7 days on/off during installation of piles for the new elevated highway. The project consisted of driving 24-inch square PPC piles with mechanical splices up to 170 feet in length. A minimum of one pile per bridge bent was selected for initial drive monitoring and restrike monitoring with the PDA. Several hundred PDA monitoring events were performed on this project. Mr. Jewell's project experience consisted of conducting dynamic monitoring using the Pile Driving Analyzer during initial drive and restrikes, monitoring driving stresses and issuing recommendations in the field when necessary, performing CAPWAP analyses to confirm pile capacity, reviewing drive logs, and supervising field technician.

Brief résumé of key project personnel anticipated to work on this contract.	
a. Name and domicile Robert Rousset, PE St. Rose, LA	b. Title/ Engineering area of expertise Program Manager / Geotechnical Engineering
c. Name of firm by which employed full time Ardaman & Associates, Inc.	d. Years' experience: With this firm: 14 With other firms: 0
e. Education: Degree(s) / Years / Specialization B.S., 2008, Civil Engineering (LSU)	f. Active registration number / state / expiration date: 38637 / LA / 09/30/2020

g. Contract role(s) / brief description of responsibilities:

Mr. Rousset serves as Assistant Vice President of Ardaman and Branch Manager of the New Orleans Office. He is responsible for managing all departments of the branch including engineering, drilling, soils laboratory, and administration. Mr. Rousset has considerable experience managing CWPPRA funded projects completed for previous and existing geotechnical retainer contracts for Louisiana's Coastal Protection and Restoration Authority. These projects have included the design of earthen terracing and marsh creation for coastal restoration and protection with field investigations requiring the use of specialized marine drilling equipment.

h. Other experience and qualifications **relevant to the proposed project**:

Houma Navigation Canal Lock Complex – Geotechnical Investigation, 15% Design, 60% Design, Pile Load Test Program, Terrebonne Parish, LA (Ongoing) Project Manager. Mr. Rousset was project manager during the completed 15% design phase and currently during the ongoing 60% design phase and pile load test program. Mr. Rousset was project manager during the completed 15% design phase and currently during the ongoing 60% design phase and pile load test program. Mr. Rousset is managing the review of existing geotechnical data and implementation of a phased approach to conduct the field investigation to obtain additional subsurface data, while maintaining the aggressive project schedule. He is also overseeing laboratory testing conducted on the soil borings obtained during the field investigation, the geotechnical engineering analyses, development of conclusions and recommendations, and final report preparation.

West Fourchon Marsh Creation & Nourishment (TE-134) Lafourche Parish, LA (2018) Project Manager. Project will create approximately 302 acres of saline intertidal marsh and nourish about 312 acres of emergent marsh using material dredged from the Gulf of Mexico. The project area will be confined by earthen containment dikes and other features along deep water channels. Mr. Rousset served as Project Manager for this project, in this capacity he coordinated all fieldwork, laboratory testing, and engineering analyses.

No Name Bayou Marsh Creation & Nourishment (CS-78), Cameron Parish, LA (Ongoing) Project Manager. The No Name Bayou Marsh Creation and Nourishment project will create approximately 502 acres of marsh, 10 acres of creeks/ponds and nourish 21 acres of existing marsh. Marshland will be created and nourished by hydraulically dredging select fill material and placing it within the marsh creation area, which will have earthen containment dikes around the perimeter in order to keep this material in place as it settles out of suspension and builds land back up. Mr. Rousset serves as Project Manager for this project, in this capacity he coordinates all fieldwork, laboratory testing, and engineering analyses.

Calcasieu Ship Channel Salinity Control Measures Planning & Feasibility Phase, Cameron & Calcasieu Parish, LA (2019) Project Manager. The project aims to limit saltwater intrusion and reduce land loss across various bayous, marshes, and lakes within the vicinity of the Calcasieu Ship Channel (CSC), located across Cameron and Calcasieu Parish. Stretching across 20 miles, the project consists of various sill structures, erosion control measures, and channelization structures. Mr. Rousset served as project manager for this project where he coordinated all field investigation(s), laboratory testing, and geotechnical engineering analyses.

Cole's Bayou Marsh Restoration, (TV-63), Vermillion Parish, LA, CPRA (2013) Project Manager. The Cole's Bayou Marsh Restoration project consists of the creation of approximately 365 acres of brackish marsh, the nourishment of approximately 53 acres of existing brackish marsh, and the increase of freshwater and sediment inflow into the project area. Mr. Rousset served as Project Manager for the project that included field and laboratory data collection phase consisting of performing a total of 26 soil borings (B-01 through B-26) to depths ranging from 20 to 80 feet below the existing mudline at locations established by the Coastal Protection and Restoration Authority (CPRA).

Front Ridge Chenier Terracing, Coastal Louisiana Phase I Engineering & Design (TV-60), Vermillion Parish, LA, CPRA, (2012) Project Manager. A CDBG-funded project stretching along the south side of Front Ridge Road 1.6 miles, the objective is to create terracing to reduce wave fetch, reestablish emergent marsh and prevent further deterioration to the shoreline of the Front Ridge community. Mr. Rousset served as Project Manager for the geotechnical investigation which included contacting landowners and acquiring documented access permission, notification and coordination with the USACE; and utility location for the borings. Ardaman conducted 10 borings at the site to a depth of 40 feet and GPS data was collected for each boring location. Subsequent to the laboratory testing, engineering analyses were performed with regard to earthen terraces that included maximum construction elevation, acceptable side slopes, acceptable crown width, offset distance, consolidation during construction sequencing recommendations, and cut/fill ratios. Recommendations were presented in a final report to the client.

Oyster Bayou Marsh Restoration (CS-59), Cameron Parish, LA, CPRA, (2012) Project Manager**.** Approximately 510 acres of marsh will be created, and 90 acres will be nourished by hydraulically dredging material from the Gulf of Mexico and pumping it to the designated fill area. Also, approximately 14,140 LF of earthen terraces will be constructed and planted. Mr. Rousset served as Project Manager for the geotechnical investigation, laboratory testing, and geotechnical analyses associated with the proposed project features.

Mid-Breton Sediment Diversion Plaquemines Parish, LA, CPRA (Sub to Stantec), (Ongoing) Project Manager**.** Mr. Rousset serves as Project Manager for CPRA's Mid-Breton Sediment Diversion Project which will reconnect the Mississippi River to the deteriorating deltaic wetlands in the Breton Sound Basin. This project includes a control structure in the mainline levee along the Mississippi River. The project also includes an associated river inlet channel, a conveyance channel across the protected landside area, and a back structure through the existing hurricane surge protection levee.

Mid-Barataria Sediment Diversion CMAR Project, Plaquemines Parish, LA, CPRA, (Sub to Archer Western – Alberici), (Ongoing) Project Manager. Served on the Construction Management At-Risk (CMAR) services for the Mid-Barataria Diversion Project. The Mid-Barataria Sediment Diversion will provide sediment, water, and nutrients from the Mississippi River to the Barataria Basin to build, maintain, and sustain wetlands.

Bayou Lafourche Marsh Creation, Lafourche Parish, LA, T. Baker Smith, (2019) - Project Manager**.** This project will create approximately 200 acres of new marsh in south-central Lafourche Parish using material dredged from Bayou Lafourche. Mr. Rousset served as Project Manager for this project, in this capacity he coordinates all fieldwork, laboratory testing, and engineering analyses.

Brief résumé of key project personnel anticipated to work on this contract.	
a. Name and domicile Ching Tsai, Ph.D., PE Baton Rouge, LA	b. Title/ Engineering area of expertise Senior Geotechnical Engineer / Geotechnical
c. Name of firm by which employed full time Ardaman & Associates, Inc.	d. Years' experience: With this firm: 21 With other firms: 13
e. Education: Degree(s) / Years / Specialization Ph.D. / Civil Engineering M.S.C.E. / Civil Engineering B.S.C.E. / Civil Engineering	f. Active registration number / state / expiration date: 23092 / LA / 09/30/2021

Dr. Tsai has served as Senior Geotechnical Engineer on numerous coastal restoration/levee projects since 2000. His experience based on the geotechnical investigation types range from borrow source investigations (BA-35, BA-36, BA-45), segmented breakwater (TE-29) to designing protection structures such as levees (BA-36, Calcasieu – BUDM Area 7), rock dikes (BA-27, BA-36) and retaining structure (BA-27, BA-36). Some of his project experience included inland marsh creations (BA-35, BA-36, PO-33), shoreline restorations (BA-35, BA-45, TE-29, TE-48) and beneficial use of dredge material (Calcasieu - BUDM Area 7).

h. Other experience and qualifications **relevant to the proposed project**:

Houma Navigation Canal Lock Complex – Geotechnical Investigation, 15% Design, 60% Design, Pile Load Test Program, Terrebonne Parish, LA (Ongoing) Senior Geotechnical Engineer**.** Dr. Tsai has reviewed the pile design and evaluate the load testing program for the foundations of the floodgate. He was involved with the lateral pile design considering size effect. He also worked with the contractor on hammer selection and evaluation to install various sizes of open-ended steel pipe piles including a 6-foot diameter steel pipe pile and concrete cylinder piles.

Barataria Land Bridge Project (BA-27), Jefferson Parish, LA Senior Geotechnical Engineer, Dr. Tsai was the principal in charge of the Phases 1 and 2 geotechnical investigation for the 2,618 acre shoreline restoration project located between Bayou Rigolettes and Bay Perot. The erosion rate at this location prior to restoration was up to 114 feet per year. The geotechnical scope includes installing concrete panel structures and rock dikes. Dr. Tsai evaluated the stability of the panel wall and rock dikes and recommend the rock dike support. The project was estimated to produce 504 net acres of wetland over 20 years.

Calcasieu River – Beneficial Use of Dredge Material Area 7, Calcasieu Parish, LA Senior Geotechnical Engineer, Dr. Tsai was the principal in charge of the geotechnical investigation for the addition to the BUDA Area 7 for the Port of Lake Charles. Due to soft sediments, typical geotechnical testing on the heavily disturbed samples could be misleading and highly unreliable. Dr. Tsai led the effort of using anisotropically consolidated (CK0U) strength testing to determine the SHANSEP strengths. He successfully used the results in evaluating the stability of the levees/dikes in projecting the strength gain with time and therefore the design of staged levee construction. The comparison of the results showed, the variability of using traditional strength testing led to unreliable analysis while SHANSEP proved to be very useful in studying the stability of soft soils.

Bayou L' Ours Ridge Hydrologic Restoration (BA-22), Lafourche Parish, LA Senior Geotechnical Engineer. The natural levees of Bayou L' Ours, a distributary of Bayou Lafourche, was breached by access and pipeline canals. The breaches led to increased tidal exchange. Dr. Tsai was the geotechnical engineer in charge to install plugs on six canals.

Barataria Land Bridge Project (BA-36), Jefferson Parish, LA Senior Geotechnical Engineer. The scope of work was to create 504 acres of marsh to a target fill height of +2.5 feet NAVD88. The geotechnical scope included borrow material investigation and construction of containment dikes. A total of 19 soil borings were drilled for this project. These borings were supplemented with 14 borings by others and 6 preliminary borings. The geotechnical analysis included slope stability analysis for the containment dikes to various dike heights, evaluation of the borrow material and a 20-year settlement prediction for the fill.

Goose Point/Point Platte Marsh Creation (PO-33), St. Tammany Parish, LA Senior Geotechnical Engineer. This project involved the creation of 1,384 acres of marsh located on the north shore of Lake Pontchartrain between Fontainebleau State Park and LA-11. Dr. Tsai was the geotechnical engineer in charge of this project. The scope of work performed consisted of taking eleven soil borings from 20 to 60 feet below mudline. Evaluate the stability and settlement of the proposed levee system and estimate the settlement rates of the hydraulically place fill.

Caminada Headland Beach and Dune Restoration (BA-45), Jefferson Parish, LA Senior Geotechnical Engineer. Dr. Tsai was the geotechnical engineer investigating the ship shoal sand sources for high quality sand to be used for this project. The project involved taking soil samples from a ship and transported to our laboratory for testing. Due to many pipeline transverses though the site, a magnetometer was used to identify the pipe lines.

Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35), Plaquemines Parish, LA Senior Geotechnical Engineer. This project included a constructed beach and dune platform along 2.7 miles of the gulf shoreline. Similar to the Caminada Headland Beach, Dr. Tsai investigated the sand sources for this project in addition to taking soil samples from the beach to evaluate the material compatibility.

Racoon Island Shoreline Protection and Marsh Creation (TE-48), Terrebonne Parish, LA Senior Geotechnical Engineer. Dr. Tsai was in charge of the geotechnical engineering aspect of the project to evaluate the stability of the proposed segmented breakwaters. Sixteen (16) soil borings were taken in the propose breakwaters. Dr. Tsai evaluated the slope stability and settlement of the proposed breakwaters.

Brief résumé of key project personnel anticipated to work on this contract.	
a. Name and domicile Julian "Jim" Porter, CET St. Rose, LA	b. Title/ Engineering area of expertise Field Services Manager / Drilling
c. Name of firm by which employed full time Ardaman & Associates, Inc.	d. Years' experience: With this firm: 42.5 With other firms: 4
e. Education: Degree(s) / Years / Specialization Attended LSU / USL 1969-1970	f. Active registration number / state / expiration date: 1993 / NGWA Certified Well Driller / NGWA No. 3717 1984 / Louisiana Water Well Driller's License / No. WWC-212

g. Contract role(s) / brief description of responsibilities:

Mr. Porter has 46 years of experience in performing soil borings and monitor well installations throughout the Southeastern U.S. and particularly in the State of Louisiana. He has overseen thousands of projects pertaining to geotechnical and environmental engineering assessments. These projects have included performing soil borings on land and over water, CPT soundings, slope inclinometer installations, settlement plate installations, two-stage field permeability testing, piezometer and monitor well installation, and utilizing specialized drilling equipment for difficult access sites. Mr. Porter is also well versed at obtaining access from landowners.

Mr. Porter is currently licensed in the states of Louisiana, Mississippi, and Florida as a water well driller. He is Certified by the National Groundwater Association in monitor well installation and drilling. Mr. Porter is experienced with 5-inch diameter undisturbed sampling methods as well.

Mr. Porter has guided as many as 10 drilling rigs with crews on projects ranging from residential investigations to a $600 million-dollar grass roots paper mill. He has been acknowledged by the Water Resources Section of the LADOTD for his contributions to the guidelines adopted in 1985 for Soil Borings and Water Well Installation Procedures. Mr. Porter has provided his assistance and recommendations to both the LADOTD and the LADEQ regarding drilling techniques, soil boring abandonment, and Geoprobe sampling. Mr. Porter was involved with our initial investment in the CPT technology. He is still involved with most of the CPT operations. He has personally performed CPT soundings on numerous projects since 1990.

Mr. Porter has scheduled drilling and supervised relevant investigations for the selected projects listed below, many of which required barge- and/or air-boat mounted drilling over water.

h. Other experience and qualifications **relevant to the proposed project**:

- Mid-Breton Sediment Diversion, Plaquemines Parish, LA
- Houma Navigation Canal Lock Complex, Terrebonne Parish, LA
- No Name Bayou Marsh Creation, Cameron Parish, LA
- Phase II No Name Bayou, Cameron Parish, LA
- W. Fourchon Marsh Creation & Nourishment, Lafourche Parish, LA
- Living Shoreline Demonstration, Grand Isle, LA
- Front Ridge Chenier Terracing, Vermillion Parish, LA
- Oyster Bayou Marsh Restoration, Cameron Parish, LA
- Madison Bay Marsh Creation & Terracing, Terrebonne Parish, LA
- Cole's Bayou Marsh Restoration, Vermillion Parish, LA
- Living Shoreline Demonstration, St. Bernard Parish, LA
- Rabbit Island Restoration Project, Cameron Parish, LA
- LA 1, Phase 1 and Phase 2, Geotechnical investigation conducted in Louisiana coastal marshes utilizing a fleet of customized airboats
- Cypress Creek, Wetland Restoration Project, Lafourche Parish, LA
- South Lake DeCade Wetland Restoration Project, Lafourche Parish, LA
- Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration, Project BA-35, Plaquemines Parish, LA
- Barataria Barrier Island Restoration Complex, Project BA-38, Plaquemines Parish, LA
- Hackberry North Island Restoration Project, Lafourche Parish, LA
- Ship Shoal Whiskey Island, West Flank Restoration Project TE-47, Terrebonne Parish, LA
- Mr. Porter has also planned many investigation projects. He has designed custom drill rigs for over water drilling, arranged site clearing after site reconnaissance, and coordinated between engineering staff and drill crew.

Subconsultant:
Fourrier & de Abreu Engineers
Resumes

Brief résumé of key project personnel anticipated to work on this contract.	
a. Name and domicile Ricardo de Abreu, Ph.D., PE Baton Rouge, LA	b. Title/ Engineering area of expertise Principal Geotechnical Engineer / Geotechnical
c. Name of firm by which employed full time Fourrier & de Abreu Engineers, LLC	d. Years' experience: With this firm: 24 With other firms: 3
e. Education: Degree(s) / Years / Specialization Doctor of Philosophy in Engineering and Applied Sciences, 2003, University of New Orleans, Louisiana. Geotechnical and Env. Engr. Master of Science in Civil Engineering, 2000, University of Sao Paulo, Brazil. Geotechnical Engr. Bachelor of Science in Civil Engineering, 1994, University of Sao Paulo, Brazil.	f. Active registration number / state / expiration date: 31257 / LA / 09/30/2022

Dr. de Abreu is an international geotechnical engineering expert and has provided geotechnical services for hundreds of facilities in Louisiana and around the world for more than 25 years. He is one of the six D.GE (Diplomate in Geotechnical Engineering) in Louisiana as certified by the Academy of Geo-Professionals of the American Society of Civil Engineers (ASCE). In the past, Dr. de Abreu was also the co-instructor of the Soil Mechanics Laboratory discipline at the University of New Orleans. He is currently FDAE's Laboratory Director.

h. Other experience and qualifications **relevant to the proposed project**:

LA-1 Improvements – Golden Meadow to Fourchon, Lafourche Parish, LA Geotechnical Investigation, Pile Design, Tie-In on Embankments for Bridges Approach; Wick Drain Design' Settlement Cells.

Racoon Island Shoreline Protection / Marsh Creation, Terrebonne Parish, LA Geotechnical Investigation, Bearing capacity, settlement analysis, and slope stability analysis for breakwater and marsh.

Manchac Wildlife Management Area- Prairie Shoreline Protection, St. John the Baptist Parish, LA Geotechnical Investigation, Bearing capacity, settlement analysis, and slope stability analysis for breakwater and marsh.

Baton Rouge Metropolitan Airport, Airport Pavement Strength (PCN) Phase II, Baton Rouge, LA Coordinated field geotechnical sampling and borings, laboratory, and geotechnical testing. Responsible for geotechnical engineering and report.

Brief résumé of key project personnel anticipated to work on this contract.	
a. Name and domicile Dustin Romero, EI Baton Rouge, LA	b. Title/ Engineering area of expertise Engineer Intern / Geotechnical
c. Name of firm by which employed full time Fourrier & de Abreu Engineers, LLC	d. Years' experience: With this firm: 3 With other firms: 5
e. Education: Degree(s) / Years / Specialization Bachelor of Science in Civil Engineering / 2016 / Civil Engineering	f. Active registration number / state / expiration date: EI 33163 / LA

Chi Epsilon, Civil Engineering Society
Spring 2016: Inducted into the Chi Epsilon Civil Engineering Honor Society
Fall 2016: Honored as the Fall 2016 Outstanding Graduate of the Department of Civil Engineering, University of Louisiana at Lafayette
April 2017: TRI Environmental Construction QA/QC for Geosynthetics and Clay Liner Installation, Austin, TX
June 2018: Applied Groundwater Statistics and Data Analysis, Kansas City, MO
August 2019: Nuclear Gauge Safety Certification, Troxler Electronic Laboratories, Inc.
August 2019: Hazmat Certification, Troxler Electronic Laboratories, Inc.
August 2019: 12 Basic Plus Course, Alliance Safety Council, Baton Rouge, LA
October 2020: Radiation Safety Officer Certification, Troxler Electronic Laboratories, Inc.
University of Louisiana of Lafayette - Fall 2016 Outstanding Graduate of the Department of Civil Engineering

h. Other experience and qualifications **relevant to the proposed project**:

Baton Rouge Metropolitan Airport – Airport Pavement Strength (PCN) Phase II, Baton Rouge, LA Managed this project in which FDAE was a subconsultant to Infrastructure Consulting & Engineering. Coordinated and provided field geotechnical sampling and borings, laboratory geotechnical testing and data collection, and geotechnical engineering.

Tangipahoa Parish Regional Solid Waste Facility – Permit Modification Application, Final Design & Construction Oversight, Independence, LA Assisted with providing geotechnical analysis and final design of the landfill grading plan, clay liner, geosynthetic liners, leachate collection and removal system, protective layer, and levees. Assisted with preparation of the cost estimates and Public Works bid package. Assisted with bidding and awarding and is currently assisting with management of construction, providing geotechnical/liner testing, CQA services, construction surveying, and certification reporting. Collected geotechnical samples and conducted subsequent laboratory testing. Performed calculations and analysis of geotechnical data and used the data to produce CQA reports.

Fourrier & de Abreu Engineers, LLC, Baton Rouge, LA Established the geotechnical laboratory at Fourrier & de Abreu Engineers in conjunction with Dr. Ricardo de Abreu, P.E. Acquired equipment, calibrated equipment, developed testing and QA/QC protocol, trained technicians, obtained AASHTO accreditation, and prepared, submitted, and obtained LELAP application. Performed field investigations and laboratory analysis on numerous commercial and residential geotechnical engineering projects. Laboratory analyses include, but are not limited to soil consolidation, Atterberg limits tests, sieve analyses, soil compression tests, visual classification of soils, and measurement of soil moisture content.

SITE Engineering Laboratory & Cory Fremin Construction, Broussard, LA & New Iberia, LA Performed field investigations, collected samples, and performed laboratory analysis on numerous commercial and residential geotechnical engineering projects. Laboratory analyses include, but are not limited to soil consolidation, Atterberg limits tests, sieve analyses, soil compression tests, concrete compression test, visual classification of soils, and measurement of soil moisture content.

Geotechnical Data Collection and Sampling

We understand the scope of work consists of performing shallow sediment sampling within the lakes and conventional soil borings on the banks. Samples collected will be analyzed for the pertinent properties and presented in a data report. Ardaman has more than 35 years of experience working for a multitude of clients conducting field reconnaissance (including rights of entry, utility locations, access, etc.), mobilization/demobilization (including difficult access sites), drilling deep and shallow soil borings, performing Cone Penetrometer Test (CPT) soundings, obtaining water table elevations with duration of reading, and installing and monitoring piezometers, inclinometers, Shape Accel Arrays, and other geotechnical instrumentation in all types of surface and subsurface conditions. Ardaman is also experienced with all of the conventional boring and sampling techniques, including: locating borings via GPS Latitude and Longitude, auger borings, sampling test pits, and testing and sampling utilizing the Standard Penetration Tests and Split Barrel Sampling of soils with equipment compliant with Standard Test Method for Energy Measurement for Dynamic Penetrometers. We conduct sampling using thin-walled 3-inch and 5-inch diameter (or larger) tubes and a variety of other undisturbed samplers. We also are experienced with soft sediment sampling through the use of vibracores or pitcher samplers. We also have the capability to perform *in-situ* field testing through the use of vane shear and CPT soundings. Ardaman is a licensed water well contractor in the State of Louisiana (WWC-212) and seals boreholes in accordance with LADEQ regulations.

Our Louisiana personnel and equipment are available to perform the work associated with this project in a timely and competent fashion. Company-wide staff resources include a pool of nearly 400 professionals, field and support staff, who fully support our efforts and are available to assist should the need arise.

Our field services personnel consist of experienced and licensed soil boring and water well drillers. Ardaman routinely completes projects ranging in scope from one or two borings to over 300 borings at a site. We maintain a fleet of hollow-stem and rotary drilling rigs (truck and ATV mounts) in Louisiana that possess a wide range of capabilities.

Because of the nature of the surface conditions in Louisiana, many projects consist of performing soil borings over water or within difficult access areas. We are quite experienced in these types of conditions. Our ATV-mounted drilling equipment that is ideally suited for sites with difficult access can potentially negate or minimize the need for clearing.

Drilling And Sampling

We understand the importance of retrieving high quality undisturbed soil samples on the banks and sediment samples within the lake. Our field and laboratory personnel are routinely trained in techniques meant to minimize sample disturbance. These techniques are described in ASTM D-1587 as well as in various manuals. Our drilling equipment can be easily modified to handle undisturbed samples of all sizes and lengths. The shallow sediment samples will be collected from a crew boat through the use of a vibracore. The soil borings for lake banks will be made utilizing rotary wash and samples will be extruded and tested in the laboratory according to the project requirements.

Laboratory Testing Services

Our laboratory technicians work under the direction of an experienced registered professional engineer. Our NICET certified technicians are supervised by a laboratory manager, who is also NICET certified. Daily, these technicians perform testing following appropriate ASTM or AASHTO standards. The Baton Rouge laboratory maintains LADEQ (LELAP), USACE and AASHTO certification.

Ardaman's geotechnical testing laboratories are operated under certified quality assurance system implemented and maintained by engineers serving as on-site QA officers. All laboratory data is subject to quality control checks and is then processed electronically to generate soil boring logs and gINT database files in standard format, or other format types.

Schedule

Based on our current schedule, the fieldwork can begin within approximately two weeks of receiving notice to proceed. The fieldwork is expected to take about seven working days to complete, weather permitting. We anticipate the laboratory testing, engineering analyses and data report preparation can be finished within four weeks after completion of the entire field program.

7. CURRENT BACKLOG AND ABILITY TO CONFORM TO SCHEDULE

We are in a position to service this contract's needs responsively. There are no significant project assignments that we anticipate conflicting with Ardaman performing the requirements of this project should we be selected. We will meet any reasonable project demands and will meet or exceed quality requirements and schedule.

8. Proposed Fee

Our proposed fee is attached as a separate document, as requested in the RFQ.

9. DBE Firms

We are partnered with Fourrier & de Abreu Engineers, a DBE firm, for this endeavor. Please find their certificates attached.

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Office of the Secretary
PO Box 94245 | Baton Rouge, LA 70804-9245
ph: 225-379-1200 | fx: 225-379-1851

John Bel Edwards, Governor
Shawn D. Wilson, Ph.D., Secretary

May 12, 2020

Fourrier & de Abreu Engineers, LLC
Ricardo C. de Abreu
10995 Coursey Blvd.
Baton Rouge, LA 70816

Dear Ricardo C. de Abreu:

We have received your firm's Disadvantaged Business Enterprise **(DBE)** and Small Business Element **(SBE)** annual affidavit. Based on the information which you provided we have concluded that your firm continues to meet the eligibility requirements of our program and remains certified for **only** the following **specific** work categories **that fall under the listed NAICS codes**:

NC541330-Engineering Services
C01-Geotechnical Engineering
C09-Civil Engineering
C22-Environmental Engineering

Please note that per the federal regulations, suppliers only receive 60% goal credit towards the materials they provide. Also note that A Louisiana Contractor's License is required by any contractor performing work in excess of $50,000 with the exception of electrical, mechanical and plumbing which are required to have a license if work is in excess of $10,000. You may contact the State Licensing Board for Contractors at (225) 765-2301 for more information. Your firm's certification will be recognized by all participants of the Louisiana Unified Certification Program. This includes all entities receiving federal transportation funding within the boundaries of our state.

Due to recent changes in the Federal Regulations which govern our **DBE and SBE** programs, firms which have been certified will no longer have an expiration date, however you will be required to submit an annual affidavit with all supporting documents stating that your firm continues to meet the eligibility requirements of the program. This form will be sent to you approximately 4 weeks prior to your anniversary date **(April 30, 2021).** You must notify our office immediately, regarding any changes which affect the social and economic disadvantage, size, ownership or control of your firm.

We reserve the right to withdraw this certification, if at any time, it is determined that **DBE and SBE** certification was knowingly obtained by the submission of false, misleading or incorrect data. We, further reserve the right to request additional information and/or conduct an on-site visit at any time during your certification period.

If we can be of further assistance, please don't hesitate to contact the DBE Certification Unit at (225) 379-1382.

Sincerely yours,

Rhonda Wallace
DBE/SBE Program Manager

LOUISIANA ECONOMIC DEVELOPMENT

DIVISION OF SMALL BUSINESS SERVICES

This certification acknowledges that

Fourrier & de Abreu Engineers, LLC

is Certified-Active as a Small Entrepreneurship with
Louisiana Economic Development's Hudson Initiative.

This certification is valid from 6/15/2020 to 6/15/2021 .

Certification No. 16268

Stephanie Hartman,
Director, Entrepreneurial Services

LOUISIANA ECONOMIC DEVELOPMENT

Division of Small and Emerging Business Development

SEBD CERTIFICATION

Fourrier & de Abreu Engineers, LLC

is hereby certified as a Small and Emerging Business Enterprise.

This certification is valid beginning 1/3/2018 and supersedes any registration or listing previously issued. At any time there is a change in ownership or control of the firm, notification must be made immediately to the Division of Small and Emerging Business Development.

Issued at Baton Rouge, Louisiana 1/3/2018

This certification expires on: 1/3/2028

Certification No. 16268

John W. Matthews, Jr.,
Executive Director, Entrepreneurial Services

SCHEDULE C to UL RFP for Geotechnical Data Collection and Sediment Sampling Services – CERTIFICATION STATEMENT

The undersigned hereby acknowledges she/he has read and understands all requirements and specifications of the Request for Proposals (RFP), including attachments.

OFFICIAL CONTACT. UL requests that the Proposer designate one person to receive all documents and the method in which the documents are best delivered. Identify the contact name and fill in the information below: (Print Clearly)

Date 11/17/2020 Official Contact Name: Robb Jewell

A. E-mail Address: rjewell@cardaman.com

B. Facsimile Number with area code: (225) 752-4878

C. US Mail Address: 316 Highlandia Drive, Baton Rouge, LA 70810

Proposer certifies that the above information is true and grants permission to UL to contact the above named person or otherwise verify the information provided.

By its submission of this proposal and authorized signature below, Proposer certifies that:

1. The information contained in its response to this RFP is accurate.
2. Proposer complies with each of the mandatory requirements listed in the RFP and will meet or exceed the functional and technical requirements specified therein.
3. Proposer accepts the procedures, evaluation criteria, mandatory contract terms and conditions, and all other administrative requirements set forth in this RFP.
4. Proposer's quote is valid for at least *180 calendar* days from the date of the proposal submission deadline specified in the RFP.
5. Proposer understands that if selected as the successful Proposer, he/she will have *15 business days* from the date of delivery of final Contract in which to complete contract negotiations, if any, and execute the final contract document.
6. Proposer certifies, by signing and submitting a Proposal for $25,000 or more, that their company, any subcontractors, or principals are not suspended or debarred by the General Services Administration (GSA) in accordance with the requirements in 2 CFR 200. (A list of parties who have been suspended or debarred can be viewed via the internet at www.sam.gov.)
7. There is no litigation or any suspension or debarment proceedings that could affect the services to be supplied in any contract resulting from this RFP, or a list of such litigation/ proceedings is attached to this Certification.
8. In the last ten (10) years, the Proposer has not filed (or had filed against it) any bankruptcy or insolvency proceeding, whether voluntary or involuntary, or undergone the appointment of a receiver, trustee, or assignee for the benefit of creditors, or if such proceedings exist, an explanation providing relevant details is attached.
9. There are no pending Securities Exchange Commission investigations involving the Proposer, or, if such are pending or in progress, an explanation providing relevant details and an attached opinion of counsel as to whether the pending investigation(s) will impair the Proposer's performance in a contract under this RFP is attached.

10. There is no open or pending litigation initiated by Proposer or where Proposer is a defendant in a customer matter, or if such proceedings exist, an explanation providing relevant details is attached.
11. Proposer certifies and agrees that the following information is correct: In preparing its response, the Proposer has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor or supplier, refused to transact or terminate business activities, or taken other actions intended to limit commercial relations, with a person or entity that is engaging in commercial transactions in Israel or Israeli-controlled territories, with the specific intent to accomplish a boycott or divestment of Israel. Proposer also has not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. UL reserves the right to reject the response of the proposer if this certification is subsequently determined to be false, and to terminate any contract awarded based on such a false response.

Authorized Signature: [signature]
Typed or Printed Name: Robb Jewell
Title: Assistant Vice President/Branch Manager
Company Name: Ardaman and Associates, Inc.
Address: 316 Highlandia Drive
City: Baton Rouge State: LA Zip: 70810

SIGNATURE of Proposer's Authorized Representative [signature] DATE 11/17/2020

PART III: Acknowledgement of Receipt

This Acknowledgement of Receipt must be signed by an Authorized Representative of the Proposer and included in Proposer's response to this Request for Proposals.

I HEREBY CERTIFY THAT I HAVE ACKNOWLEDGED RECEIPT OF THIS ADDENDUM 1 TO THE REQUEST FOR PROPOSALS FOR MASTER DESIGN SERVICES AND HAVE INCLUDED A COPY OF THIS ACKNOWLEDGEMENT WITH PROPOSAL AS EVIDENCE OF RECEIPT.

COMPANY NAME: Ardaman & Associates, Inc.

SIGNATURE OF AUTHORIZED REPRESENTATIVE: _____

PRINTED NAME: Robert Jewell TITLE: Branch Manager

DATE: 11.17.20

End of Addendum