



West Virginia Purchasing Division

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Charleston, WV 25305
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Header

List View

General Information | [Contact](#) | [Default Values](#) | [Discount](#) | [Document Information](#)

Procurement Folder: 89810

Procurement Type: Central Purchase Order

Vendor ID: VS0000004015

Legal Name: O'Brien & Gere Engineers Inc.

Alias/DBA:

Total Bid: \$0.00

Response Date: 06/04/2015

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Solicitation Description: Addendum #1 WVCA Dam Rehabilitation EOI

Total of Header Attachments: 0

Total of All Attachments: 0



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

**State of West Virginia
 Solicitation Response**

Proc Folder : 89810
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Date issued	Solicitation Closes	Solicitation No	Version
	2015-06-04 13:30:00	SR 1400 ESR05201500000003911	1

VENDOR

VS0000004015
 O'Brien & Gere Engineers Inc.

FOR INFORMATION CONTACT THE BUYER

Laura E Hooper
 (304) 558-0468
 laura.e.hooper@wv.gov

Signature X	FEIN #	DATE
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All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Dam engineering				

Comm Code	Manufacturer	Specification	Model #
81101507			

Extended Description :	Dam engineering
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EXPRESSION OF INTEREST AND STANDARD FORM 330

Watershed Dam Rehabilitation Program



**West Virginia Conservation Agency
Charleston, WV**

June 4, 2015


Watershed Dam Rehabilitation Program

**West Virginia Conservation Agency
Charleston, WV**

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June 4, 2015

Laura Hooper, Buyer

Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

Submitted electronically through wvOASIS

RE: Watershed Dam Rehabilitation Program

Dear Ms. Hooper:

O'Brien & Gere has been meeting with Brian Farkas and other West Virginia Conservation Agency (WVCA) staff for the past 3 years hoping to assist the WVCA with its dam safety program. We are pleased to receive this opportunity to formally express our interest in working in partnership with WVCA by providing professional engineering services for planning and construction oversight tasks related to the rehabilitation of flood control structures in multiple watersheds within West Virginia. Our submittal is based on the information presented in the Expression of Interest (EOI) Solicitation Number AGR1500000004 and our **long-term experience in dam rehabilitation planning, design and construction in West Virginia, all of the states that adjoin WV, and throughout the eastern United States**. As requested in the EOI, our submittal is an SF330 Form and we have included our Project Approach and Additional Qualifications and Experience in Section H of that form.

For the purposes of this project, O'Brien & Gere has joined forces with TERRADON Corporation, a WBE-firm based in Poca, West Virginia that will provide a local presence for the tasks that involve field activities. **TERRADON has strong environmental engineering and dam design/construction experience in West Virginia** and will complement O'Brien & Gere's areas of expertise nicely for this project. We have also included Carl Montana, former NRCS Engineer and current O'Brien & Gere employee, as a Program Consultant due to his long-term experience with NRCS dams.

O'Brien & Gere has been providing dam engineering services for more than 70 years. Our project team consists of staff that possess extensive experience in dam safety evaluation and design, including:

- Planning and development of dam safety programs for compliance with federal and state agencies
- Dam inspection and investigation, including a number of NRCS dams
- Hydrologic/hydraulic analyses, including use of the SITES program
- Investigation and design of NRCS-type drop inlet spillway and outlet conduit systems
- Concrete repair technology and rehabilitation of spillway structures
- Rehabilitation of earth embankments and earth-lined spillways
- Environmental assessment, including wetlands delineation and NEPA documentation

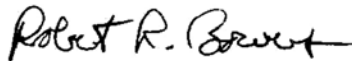
Our team also provides construction administration/management and resident inspection services for our dam safety projects, which will be the primary focus for Upper Decker's Creek Site 1. **The O'Brien & Gere/TERRADON team has thorough knowledge of applicable NRCS and West Virginia design standards and Dam Safety Regulations.** Furthermore, our proposed Project Manager is a registered West Virginia Professional Engineer and our project team has worked on more than a dozen dams in WV, including the investigation, design and construction administration/inspection of 10 West Virginia dams in the past few years.

O'Brien & Gere has **inspected several hundred dams and has performed design and construction phase services for rehabilitation of more than 100 dams**. This breadth of experience allows us to draw from a wide variety of solutions to dam safety issues that typically result in economical repair/upgrade programs and long-term structural integrity for dam owners. We recognize that funding for WVCA's dam safety program has been historically limited and we believe that our practical approach to dam engineering will yield not only **cost-effective solutions, but also improved operability and reduced future maintenance costs**, which distinguishes us from many other firms. O'Brien & Gere is a Sustaining Member of the Association of State Dam Safety Officials (ASDSO) and the United States Society on Dams (USSD). Our involvement in these organizations keeps us abreast of national developments in dam safety and provides opportunities for interaction with federal and state dam safety regulators.

We hope that O'Brien & Gere's **proven track record with dam rehabilitation programs, strong project team, available resources, and thorough understanding of NRCS processes and dam safety regulations in the state of West Virginia** demonstrates our unique capabilities for this project. If you have any questions regarding this proposal, please feel free to contact me at 484-804-7209. We appreciate this opportunity to provide dam engineering services to WVCA, and look forward to working with you on this program.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.



Robert R. Bowers, PE
Vice President

Attachments: Standard Form 330
Required Forms
Exceptions and Clarifications

Standard Form 330

ARCHITECT – ENGINEER QUALIFICATIONS

PART I – CONTRACT-SPECIFIC QUALIFICATIONS

A. CONTRACT INFORMATION

TITLE AND LOCATION (CITY AND STATE)

Watershed Dam Rehabilitation Program (Charleston, WV)

PUBLIC NOTICE DATE

May 4, 2015

SOLICITATION OR PROJECT NUMBER

AGR1500000004

B. ARCHITECT-ENGINEER POINT OF CONTACT

NAME AND TITLE

Gary Emmanuel, PE, *Project Manager*

NAME OF FIRM

O'Brien & Gere Engineers, Inc.

TELEPHONE NUMBER

484-804-7239

FAX NUMBER

215-628-9953

E-MAIL ADDRESS

gary.emmanuel@obg.com

C. PROPOSED TEAM

(Complete this section for the prime contractor and all key subcontractors.)

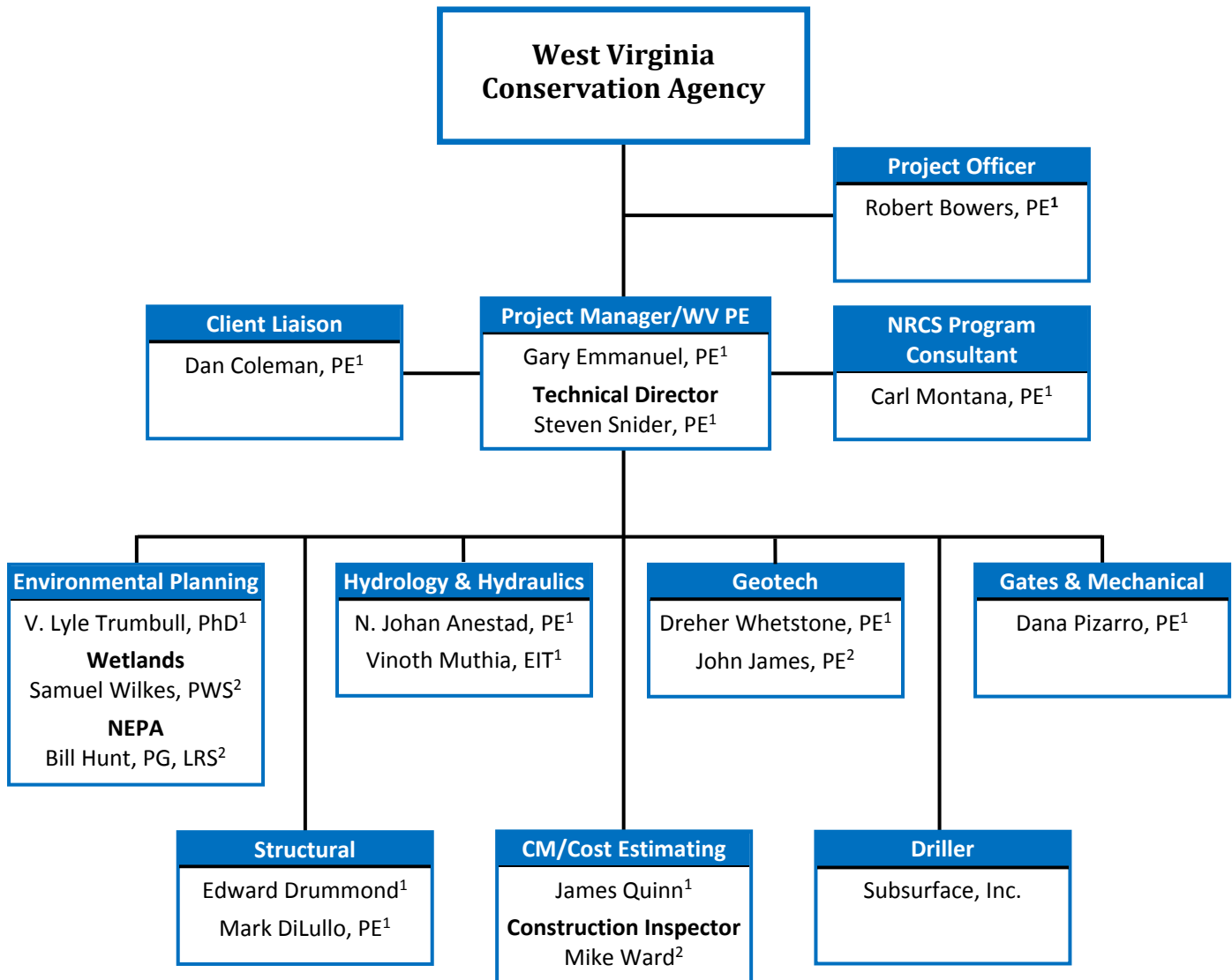
a.	(CHECK)			9. FIRM NAME	10. ADDRESS	11. ROLE IN THIS CONTRACT
	PRIME	J-V PARTNER	SUBCONTRACTOR			
	X			O'Brien & Gere Engineers, Inc. <input checked="" type="checkbox"/> check if branch office	Bentwood Campus 301 E. Germantown Pike 3rd Floor East Norriton, PA 19401	Firm Point of Contact, Project Management, Dam Engineering Services
b.	X			O'Brien & Gere Engineers, Inc. <input checked="" type="checkbox"/> check if branch office	22 Saw Mill River Road Hawthorne, NY 10532	Technical Services
c.	X			O'Brien & Gere Engineers, Inc. <input checked="" type="checkbox"/> check if branch office	4435 Waterfront Drive Suite 205 Glen Allen, VA 23060	Client Services
d.	X			O'Brien & Gere Engineers, Inc. <input checked="" type="checkbox"/> check if branch office	1090 King Georges Post Road Suite 904 Edison, NJ 08837	NRCS Program Consulting Services
e.			X	Terradon Corporation <input type="checkbox"/> check if branch office	409 Jacobson Drive Poca, WV 25159	Environmental Planning, Field Geotech, Construction Inspection, & Surveying
f.			X	Subsurface, Inc. <input type="checkbox"/> check if branch office	P.O. Box 359 Gauley Bridge, WV 25085	Drilling Services
g.				<input type="checkbox"/> check if branch office		
h.				<input type="checkbox"/> check if branch office		

D. ORGANIZATION CHART OF PROPOSED TEAM

(Attached)

D. ORGANIZATIONAL CHART OF PROPOSED TEAM

Successful projects begin by selecting and committing an experienced project team and providing the necessary resources to complete the key individual elements of the project. Early discussions with the WVCA will be directed, in part, to identifying and implementing the communication framework best suited to the goals of each project. The following presents our proposed organization chart for this program.



Company Legend
O'Brien & Gere ¹
TERRADON Corporation ²

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one section E for each key person.)

12. NAME Robert R. Bowers, PE		13. ROLE IN THIS CONTRACT Project Officer		14. YEARS EXPERIENCE	
				A. TOTAL 36	B. WITH CURRENT FIRM 36
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (East Norriton, PA)					
16. EDUCATION (degree and specialization) ME/1978/Geotechnical Engineering; Cornell University BS/1977/Civil Engineering; Cornell University			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline) Professional Engineer: DE, CT, GA, MI, NJ, NY, OH, PA Pending: WV, LA, RI, TN, VA		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Sustaining Member of Association of State Dam Safety Officials (ASDSO – Board Advisory and Training Committees) and United States Society on Dams (USSD); member of American Society of Civil Engineers.					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) County-Wide Dam Safety Program (Broome County, NY)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2014	CONSTRUCTION (IF APPLICABLE)
(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm		
Project Officer – Project included developing a program to bring 20 NRCS dams into compliance with the revised NYSDEC Dam Safety regulations. The resulting phased program allowed for development of EAPs (including dam breach analyses and inundation mapping) in the first year, O&M Manuals in the second year, and Engineering Assessments (EA's) over the next three years. Subsequent task orders included ROV inspections of the outlet conduits, SITES analyses of emergency spillway erosion potential with recommended improvements for certain vulnerable spillways, and a long-term dam upgrade program to address deficiencies identified by the EA's.					
b.	(1) TITLE AND LOCATION (city and state) Stafford County Dams (Stafford County, VA)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES	CONSTRUCTION (IF APPLICABLE)
(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm		
Project Officer – Performed dam inspections, investigations, engineering analyses, preliminary design, value engineering, and construction administration for three water supply dams owned and operated by the County, including one NRCS dam. Services included conducting visual inspections, hydrologic, hydraulic, and dam failure assessments, dam breach analyses and inundation mapping to confirm hazard classifications, and preparation of summary reports in accordance with Virginia dam safety regulations. Permit applications were prepared for the structural modifications associated with raising of the Aquia Dam. Current work includes SITES analysis of erosion potential for the Potomac Creek Dam #1 emergency spillway.					
c.	(1) TITLE AND LOCATION (city and state) DNREC Dams Improvement Program (Kent & Sussex Counties, DE)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) 2 dams scheduled in 2015, the other 6 scheduled for 2016/17
(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm		
Project Officer – Site investigations, field surveys, and preliminary and final designs for 8 dams, including installation of operable gates at existing or new outlets, repair/replacement of concrete structures/ spillways, shoreline protection, including subsurface investigations, hydrologic/hydraulic analyses, and updating EAPs.					
d.	(1) TITLE AND LOCATION (city and state) Philadelphia Water Dept. Engineering Services for Dams & Reservoirs (Philadelphia, PA)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Various
(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm		
Project Officer – O'Brien & Gere has been providing dam safety services for 8 reservoirs in the PWD water supply system for over 25 years. Projects have included subsurface investigations for slope stability and seepage analyses, underwater inspections, annual dam safety inspections, preparation of EAPs and Operation, Maintenance & Inspection Manuals, and design and construction administration for modifications to the dams.					

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one section E for each key person.)

12. NAME Gary B. Emmanuel		13. ROLE IN THIS CONTRACT Project Manager		14. YEARS EXPERIENCE	
				A. TOTAL 35	B. WITH CURRENT FIRM 7
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (East Norriton, PA)					
16. EDUCATION (degree and specialization) BS/1976/Civil Engineering; Lafayette College MS/1982/Civil Engineering; The Pennsylvania State University			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline) Professional Engineer: WV, AR, DE, MD, NJ, PA, WV		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Member of American Society of Civil Engineers and Association of State Dam Safety Officials.					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) County-Wide Dam Safety Program (Broome County, NY)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES 2014	CONSTRUCTION (IF APPLICABLE)	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Project Manager – Project included developing a program to bring 20 NRCS dams into compliance with the revised NYSDEC Dam Safety regulations. The resulting phased program allowed for development of EAPs (including dam breach analyses and inundation mapping) in the first year, O&M Manuals in the second year, and Engineering Assessments (EA's) over the next 3 years. Subsequent task orders included ROV inspections of the outlet conduits, SITES analyses of emergency spillway erosion potential with recommended improvements for certain vulnerable spillways, and a long-term dam upgrade program to address deficiencies identified by EA's.					
b.	(1) TITLE AND LOCATION (city and state) NCCD Delaware Bay Dikes Repair and Prevention Project (New Castle County, Delaware)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) 2014	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Project Manager – Prepared designs for the upgrade and repair of five flood protection dikes bordering the Delaware River to qualify the structures for inclusion in the USACE Levee Rehabilitation and Inspection Program. Performed topographic surveys, engineering inspections, geotechnical investigations and prepared designs for raising and reinforcement of the dikes. Providing construction phase services including on-site inspection.					
c.	(1) TITLE AND LOCATION (city and state) Philadelphia Water Dept. Engineering Services for Dams & Reservoirs (Philadelphia, PA)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Various	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Project Manager – O'Brien & Gere has been providing dam safety services for 8 reservoirs in the PWD water supply system for over 25 years. Projects have included subsurface investigations for slope stability and seepage analyses, underwater inspections, annual dam safety inspections, preparation of EAPs and Operation, Maintenance & Inspection Manuals, and design and construction administration for modifications to the dams.					
d.	(1) TITLE AND LOCATION (city and state) DASNY State-Wide Dam Safety Program (Multiple Locations, Central and Adirondack Regions of New York)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Papish Pond – 2014; Oneida Dam – 2015; Lows Lake - 2016	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Technical Associate - Developed documents for compliance with NYSDEC dam safety regulations for five dams owned and operated by the State, through a contract with the DASNY. Hydrologic and hydraulic models were used to evaluate the Spillway Design Flood (SDF) for each dam; perform dam breach analyses; and to generate inundation mapping. The project scope also includes performing dam safety inspections, conducting engineering assessments, developing EAPs and Operation, Maintenance & Inspection Manuals, evaluation of alternatives, development of cost estimates, and design and construction administration of the proposed improvements.					
e.	(1) TITLE AND LOCATION (city and state) USACE Phila. District, Upgrade/Repair of Lake Denmark Dam & Picatinny Lake Dam (Picatinny Arsenal, NJ)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES 2013	CONSTRUCTION (IF APPLICABLE) 2013	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Project Manager - Prepared designs for upgrades and repairs of two high hazard dams. Performed geotechnical and forensic concrete investigations for structural stability analyses. Prepared Incremental Hazard Evaluations to select Spillway Design Floods as the basis for design of improvements. Also updated the EAPs following construction					

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one section E for each key person.)

12. NAME Steven H. Snider, PE		13. ROLE IN THIS CONTRACT Technical Director		14. YEARS EXPERIENCE	
				A. TOTAL 40	B. WITH CURRENT FIRM 24
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (Hawthorne, NY)					
16. EDUCATION (degree and specialization) BS/1974/Civil & Env. Engineering; Clarkson University AS/1972/Engineering Science; SUNY Canton			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline) Professional Engineer: NJ, NY, PA Federal Energy Regulatory Commission (FERC) Independent Consultant		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Sustaining Member of Association of State Dam Safety Officials (ASDSO – Advisory Committee) and United States Society on Dams (USSD); member of American Society of Civil Engineers.					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) County-Wide Dam Safety Program (Broome County, NY)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2014	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm	
Technical Director – Engineering Assessments, Emergency Action Plans and O&M Manuals for 21 'Class B & C' NRCS flood control embankments according to NYSDEC Part 673 regulations. The Assessments included visual inspections; review of historical archives; evaluation of hydraulic capacity and embankment stability; and recommendations for repairs, improvements, further study and regulatory compliance. The EAP's included design flood and dam break inundation mapping.					
b.	(1) TITLE AND LOCATION (city and state) Evaluation of Emergency Spillway Erosion Potential (Broome County, NY)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2014	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm	
Project Manager – Evaluation of emergency spillway erosion potential for 21 flood control dams using the NRCS SITES computer software. Project included in-situ density testing and laboratory analyses to estimate erosive characteristics of the earth-lined channels. Evaluation and televised inspection of principal spillway conduits through 21 earth embankments.					
c.	(1) TITLE AND LOCATION (city and state) Virginia Power, Mt. Storm Lake Dam Remediation (Mt. Storm, WV)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 1995	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm	
Senior Manager – Detailed conceptual evaluation of alternatives to remediate insufficient spillway capacity. The studies included consideration of a wide variety of options including dam raising; existing spillway expansion; new emergency spillways; and combinations thereof. Construction cost matrices were developed to assist in selecting a cost effective solution for the 200-foot high rockfill dam.					
d.	(1) TITLE AND LOCATION (city and state) West Virginia-American Water Company, Ada Dam Improvements (Bluefield, WV)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 1983	CONSTRUCTION (IF APPLICABLE) \$1.68 million
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm	
Resident Engineer – Designed major improvements to a 60-foot-high earth embankment including a new ogee side-channel spillway, chute and energy dissipator; 60-foot high intake tower; outlet works; rockfill stabilizing berm; and foundation grouting. Resident engineer for construction.					
e.	(1) TITLE AND LOCATION (city and state) North Jersey District Water Supply Commission, Multiple Services Contract (Wanaque, NJ)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2015	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm	
Project Manager – Multiple services contract including design of a reinforced concrete overlay for Green Swamp Dam Nos. 2 & 4; remediation design of Post Brook Dam; seismic stability analyses of Monksville and Pompton Lakes Dam; ROV diving inspection of the Raymond Dam intake tower; hydraulic modeling of the Raymond Dam intake; corrosion inspection of the twin 60-inch intake conduits; stability analyses of the residual storage lagoon embankments.					

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one section E for each key person.)

12. NAME Daniel G. Coleman, PE		13. ROLE IN THIS CONTRACT Client Liaison		14. YEARS EXPERIENCE	
				A. TOTAL 42	B. WITH CURRENT FIRM 40
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (Glen Allen, VA)					
16. EDUCATION (degree and specialization) BS/1985/Environmental Engineering; Syracuse University			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline) Professional Engineer: VA, MD		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Professional affiliations include West Virginia Municipal Water Quality Association; American Water Works Association (AWWA); and Water Environment Federation (WEF)					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) City of Norfolk, Western Branch Dam Rehabilitation (Norfolk, VA)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2014	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm	
City of Norfolk, Virginia – Provided bidding phase services for a major rehabilitation (\$23 million construction cost) of the Western Branch Dam which is City's primary drinking water reservoir. As the City's on call dam engineer of record, attended and participated in the emergency tabletop exercise along with key City representatives, emergency response personnel for local fire and police departments and the State Highway Department. Also responded to an unusual incident at the dam where migration of soils was observed from the embankment.					
b.	(1) TITLE AND LOCATION (city and state) City of Norfolk Department of Utilities, Lake Whitehurst Dam and Spillway Rehabilitation (Norfolk, VA)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 1990	CONSTRUCTION (IF APPLICABLE) 1992
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm	
Project Manager – Completed hydraulic, hydrologic, and subsurface investigation of the dam and spillway structure, and recommended a remedial program to rehabilitate the dam and spillway. Final design documents were developed and construction phase services were provided.					
c.	(1) TITLE AND LOCATION (city and state) Union Camp Earthen Embankment Evaluation (Franklin, VA)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 1998	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm	
Evaluation of approximately 7 miles of earthen embankment approximately 30 -35' in height impounding 50,000 acre-feet of water. Embankment was evaluated for seepage, piping, sloughing, erosion, potential for overtopping, detrimental vegetative cover and other potential threats to the integrity of the impoundment.					
d.	(1) TITLE AND LOCATION (city and state) Miscellaneous Water and Wastewater Services (Williamsburg, VA)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 1999	CONSTRUCTION (IF APPLICABLE) 2001
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input checked="" type="checkbox"/> check if project performed with current firm	
Project Officer – Evaluated and improved a dam which impounded leachate from an industrial waste landfill. Evaluated industrial sludge lagoons and designed a stabilization/capping plan for the lagoons. Designed a wastewater collection, pumping, and transmission system to service the 700-acre Virginia site. The collection system consisted of approximately 15,000 lf of 8- to 15-inch gravity sewer and 15 manholes. The depth of the system approached 20 ft. The pumping station was a 1 MGD wet-well/dry-well station with two 100 hp pumps with variable frequency drives, and the force main consisted of approximately 10,000 lf of 10-inch HDPE pipe. Pumping station design included emergency generator, autodialer alarm, and odor control system. Provided wastewater treatment plant services to identify modifications to accommodate significantly changed wastewater characteristics and reduced flows and to lower O&M costs. The facility consisted of multiple lagoon impoundments incorporated with pH adjusted flocculation clarifiers for zinc precipitation, trickling (oxidation) filters, rotating biological contactors, secondary clarification, UV disinfection, and a fire protection reservoir. Services also included identification and evaluation of the scope of treatment plant upgrade items to allow elimination of surface impoundments and sludge lagoons from active service.					

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one section E for each key person.)

12. NAME Carl Montana, PE		13. ROLE IN THIS CONTRACT NRCS Program Consultant		14. YEARS EXPERIENCE	
		A. TOTAL 52	B. WITH CURRENT FIRM 2		
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (Edison, NJ)					
16. EDUCATION (degree and specialization) BS/1963/Civil Engineering/Rutgers University			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline) Professional Engineer – NJ, PA, MA, DE		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Mr. Montana worked for the USDA Soil Conservation Service (now NRCS) from 1965 to 1984 as State Design Engineer, State Construction Engineer and State Conservation Engineer working primarily in the Federal PL 566 Watershed Protection and Flood Control Program in NJ.					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) Natural Resources Conservation Service (NRCS) NRCS George H. Nichols Multipurpose Dam Rehabilitation (Massachusetts)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2012	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input type="checkbox"/> check if project performed with current firm	
Provide Peer Review Services on the Assessment, Design and Construction to rehabilitate the George H. Nichols Multipurpose Dam. The dam was constructed in 1970 to provide flood control and recreation. Upstream urban development created increased runoff and predicted hydrologic conditions during the design storm event (PMP) resulting in the dam no longer meeting current NRCS standards and criteria. Among other minor changes the secondary spillway capacity was increased by elimination the unstable existing earth spillway and adding a new secondary spillway armored with articulated concrete blocks (ACBs). Design was completed in 2010.					
b.	(1) TITLE AND LOCATION (city and state) NRCS ID/IQ Contract for A-E Services for Assessment of Dams, Design and CM Services (Continental US and Alaska)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2013	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input type="checkbox"/> check if project performed with current firm	
Provide PEER Review and Technical Expert Services on NRCS IDIC Contract for the Assessment, Design and Rehabilitation (Construction) of aging Public Law 566 Single and Multiple Purpose Dams Nation Wide.					
c.	(1) TITLE AND LOCATION (city and state) NRCS Deep Creek Dam Number 5 (North Carolina)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 1997	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input type="checkbox"/> check if project performed with current firm	
Senior Project Reviewer and Chairman of the in-house Peer Review Team for the design of a new \$12 million dollar, 90 foot high composite, roller compacted concrete (RCC) and earth fill, dam in North Carolina. The dam is scheduled to be built in 2003 and will include an earth fill embankment, earth/rock auxiliary spillway RCC gravity section, and RCC chute spillway. When completed the dam will provide water supply and flood control.					
d.	(1) TITLE AND LOCATION (city and state) NRCS Inspection/Rehabilitation Assessment (Kansas)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 1997	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input type="checkbox"/> check if project performed with current firm	
Project Manager and Lead Engineer for the assessment of 18 floodwater retarding dams for the NRCS in Kansas. Work included field inspections, hydrologic analysis using the SITES; breach routings using the unsteady flow HEC-RAS model; development of inundation maps using ArcView GIS and the GEO-RAS GIS interface; identification of current hazard class and identification of alternatives to upgrade the dams to meet current NRCS and State of Kansas criteria.					
e.	(1) TITLE AND LOCATION (city and state) State of Virginia Dam Inspections (Virginia)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 1989	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE			<input type="checkbox"/> check if project performed with current firm	
Project Manager and Primary Inspector for the inspection of 16 NRCS Class I (C) and II (B) Dams operated by various Virginia Soil and Water Conservation Districts, and the development of a report on their condition including recommendations for their repair and short and long term maintenance and operation needs with associated costs. The work included a detailed visual and video inspection of the principal spillway systems (risers, conduits and outlet structures) and the embankment and foundations drains. The project was managed by the Virginia Department of Conservation and Recreation, Division of Dam Safety.					

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one section E for each key person.)

12. NAME V. Lyle Trumbull, PhD		13. ROLE IN THIS CONTRACT Environmental Planning		14. YEARS EXPERIENCE	
				A. TOTAL 18	B. WITH CURRENT FIRM 10
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (East Norriton, PA)					
16. EDUCATION (degree and specialization) PhD/1996/Biology; University of Illinois MS/1988/Biology; Clarion University of Pennsylvania BS/1984/Biology; Lebanon Valley College			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline)		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.)					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) U.S. Army Corps of Engineers (USACE), Philadelphia District, Environmental Assessment (Picatinny Arsenal, NJ)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2009	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager – Prepared an Environmental Assessment (EA) for the planned upgrade of Picatinny Lake Dam and Lake Denmark Dam. EA focused on impacts to wetland areas and listed species. Additional services included UXO clearance; wetland delineation, permitting, and mitigation; and cultural and archeological assessment.			<input checked="" type="checkbox"/> check if project performed with current firm	
b.	(1) TITLE AND LOCATION (city and state) USACE, Philadelphia District, Environmental Assessment (Picatinny Arsenal, NJ)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2007	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager – Revised an EA for the planned construction of an Armament Integration Facility at Picatinny Arsenal. This EA evaluated the impact of this project to threatened and endangered species, wetland resources, noise, ambient air quality and cumulative impacts. A facility-wide air dispersion model (130 sources) was conducted for this EA.			<input checked="" type="checkbox"/> check if project performed with current firm	
c.	(1) TITLE AND LOCATION (city and state) USACE, Philadelphia District, Environmental Assessment (Picatinny Arsenal, NJ)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2007	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager – Authored an EA for the planned construction of the Modular Shooting Equipment Building at Picatinny Arsenal. This EA evaluated the impact of this project to threatened and endangered species, wetland resources, noise, and ambient air quality. Cumulative impacts were assessed for noise and facility wide lead concentrations in ambient air.			<input checked="" type="checkbox"/> check if project performed with current firm	
d.	(1) TITLE AND LOCATION (city and state) U.S. Army Corps of Engineers, Philadelphia District, Environmental Assessment (Picatinny Arsenal, NJ)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2008	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager – Authored an EA for the planned construction of the Ballistic Evaluation Facility (BEF) at Picatinny Arsenal. This EA evaluated the impact of this project to threatened and endangered species, wetland resources, noise, and ambient air quality. The cumulative impact evaluation used a facility-wide air dispersion model to examine air impacts and a facility-wide noise model to evaluate the cumulative effects of noise from this project. This evaluation also considered the effects of atmospheric deposition from BEF howitzers to a nearby reservoir.			<input checked="" type="checkbox"/> check if project performed with current firm	
e.	(1) TITLE AND LOCATION (city and state) USACE, Unified Security Forces Operations Facility, (McGuire Air Force Base, NJ)			(2) YEAR COMPLETED	
				PROFESSIONAL SERVICES 2010	CONSTRUCTION (IF APPLICABLE)
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Permitting Manager – Responsible for coordinating all environmental permits associated with the construction of the facility. Permits include an air permit for an emergency generator and two boilers, a Burlington County Soil Conservation District/Application for Soil Erosion and Sediment Control Plan, and an Environmental Protection Plan.			<input checked="" type="checkbox"/> check if project performed with current firm	

12. NAME Samuel P. Wilkes, MS, PWS	13. ROLE IN THIS CONTRACT Wetlands	14. YEARS EXPERIENCE	
		a. TOTAL 20	b. WITH CURRENT FIRM 2
15. FIRM NAME AND LOCATION (City and State) TERRADON Corporation (Poca, West Virginia)			
16. EDUCATION (DEGREE AND SPECIALIZATION) Master of Science; Environmental Science & Policy Bachelor of Science, Earth & Environmental Science		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Wetland Scientist – Nationwide OSHA 1910.120/1926.65 HAZWOPER	

18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)
 Sam Wilkes serves as TERRADON's Environmental Project Manager. Wilkes offers more than 20 years consulting experience as a project manager and senior environmental scientist providing technical support to watershed management, restoration, natural resource conservation, and hazardous materials programs. He has experience providing oversight and management of field teams and contractors collecting wetland, stream quality, environmental media data, and general site condition data for site characterization and environmental permitting purposes. As a project manager, he regularly interact with clients, manages budgets, personnel staffing, prepares quality project deliverables, meets project deadlines, and presents scientific information to clients and the general public.

Cormier, S. M., Wilkes, S. P. and Zheng, L. (2013). Relationship of land use and elevated ionic strength in Appalachian watersheds. *Environmental Toxicology and Chemistry*, 32: 296–303. doi: 10.1002/etc.2055

U.S. EPA (Environmental Protection Agency). 2011. A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams. Office of Research and Development, National Center for Environmental Assessment, Washington, DC. EPA/600/R-10/023F. (http://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=233809)

19. RELEVANT PROJECTS

a.	(1) TITLE AND LOCATION (City and State) Pine Creek Watershed Implementation Plan, Beckley, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2011	CONSTRUCTION (If Applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input type="checkbox"/> Check if project performed with current firm	
	Project Manager to support the WVDEP and Piney Creek Watershed Association to create a watershed management plan within 80K budget. The implementation plan integrated strategies for both nonpoint and point sources throughout the watershed to meet the pollutant reductions required by the TMDLs. The watershed contains many contributing sources, such as abandoned mine lands, runoff from urban and non-vegetated areas, failing septic systems, and stream bank erosion. The plan is a tool to help determine and prioritize green infrastructure projects locations throughout the watershed, especially within the City of Beckley, MS4 area.		
b.	(1) TITLE AND LOCATION (City and State) WV Total Maximum Daily Load Development, Statewide, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2003-2013	CONSTRUCTION (If Applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input type="checkbox"/> Check if project performed with current firm	
	Under the Clean Water Act, provided support of technical tasks for over 2,500 TMDLs developed for the WVDEP/DWWM since 2003 with a cumulative project budget of over \$7M. Responsibilities included assessing watershed data for metals, pH, fecal coliform and biological impairment representation in the water quality modeling. TMDLs were developed by integrating all available data; chemical, biological, permit and landuse information, into the watershed modeling and permit allocation processes. Managed the team of biologists using the USEPA stressor identification methodology to identify pollutant stressors to the biological community to ensure all significant pollutant sources are captured in the TMDL process. This stressor identification process has become a collaborative effort directed by Mr. Wilkes that brings together a wide array of ecologists and biologists to arrive at causative stressor decisions to address biologically impaired streams.		
c.	(1) TITLE AND LOCATION (City and State) Waters of the U.S. Assessment and Delineation statewide, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2013-2014	CONSTRUCTION (If Applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm	
	Managed and conducted Waters of the US assessment and delineation on over 300 individual oil/gas well pads, site access roads, and over 1,800 field inspections of aboveground storage tanks. All work was done in accordance with US Army Corps of Engineers (USACE) 1987 Manual, the Eastern Mountains and Piedmont Regional Supplement and WVDEP Guidance. Individual or nationwide permits have been obtained through the USACE Huntington Office.		

12. NAME Bill Hunt, PG, LRS	13. ROLE IN THIS CONTRACT NEPA	14. YEARS EXPERIENCE	
		a. TOTAL 30	b. WITH CURRENT FIRM 5

15. FIRM NAME AND LOCATION (City and State) TERRADON Corporation (Poca, West Virginia)
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16. EDUCATION (DEGREE AND SPECIALIZATION) Bachelor of Science, Environmental Science Master of Arts, Geography	17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Geologist-IN Licensed Remediation Specialist-WV
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18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)
 Bill Hunt serves as TERRADON's VP over the Geo-Environmental Division. Hunt offers 30 years of environmental management expertise during the completion of more than 1000 environmental projects. Hunt is a Licensed Remediation Specialist and a Professional Geologist. His background includes NEPA Compliance – EAs and FONSIs, Phase I and II ESAs, Section 404/401 permitting, soil and groundwater remediation, RCRA Closures, SPCC, BMP, SWPP and GPP plan preparation and testing and analysis. Hunt has provided environmental management services on a wide variety of projects ranging from large industrial properties to undeveloped raw land.

19. RELEVANT PROJECTS

a.	(1) TITLE AND LOCATION (City and State) NEPA Environmental Assessment (EA) Matewan, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2015	CONSTRUCTION (If Applicable)

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm
EA conducted for the Mingo County Board of Education for a property transfer. This work was done as a Section 6(f) Conversion Land project pursuant to the requirements of the Land and Water Conservation Act (LAWCON) of 1965. Three replacement parcels of land were evaluated for conversion of the existing Matewan Swimming Pool. The project evaluated the alternative properties for potential impact to cultural resources, hazardous materials/wastes, geologic resources, noise and energy resources, surface water resources, floodplains, wetlands, threatened and endangered species, recreation, aesthetics, socio-economic conditions and environmental justice.	

b.	(1) TITLE AND LOCATION (City and State) NEPA Environmental Assessment (EA) Charleston, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2012	CONSTRUCTION (If Applicable)

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm
EA conducted for the Kanawha County Board of Education for a property transfer. This work was done as a Section 6(f) Conversion Land project pursuant to the requirements of the Land and Water Conservation Act (LAWCON) of 1965. Three replacement parcels of land were evaluated for conversion of an existing park. The project evaluated the alternative properties for potential impact to cultural resources, hazardous materials/wastes, geologic resources, noise and energy resources, surface water resources, floodplains, wetlands, threatened and endangered species, recreation, aesthetics, socio-economic conditions and environmental justice.	

c.	(1) TITLE AND LOCATION (City and State) Cell Tower NEPA Categorical Exclusion Study Multiple Locations, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2010 - 2015	CONSTRUCTION (If Applicable)

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm
Conducted numerous NEPA Compliance Assessments for cell tower locations throughout the state of West Virginia. The work followed NEPA Section 107 guidelines assessing the properties for potential impact to cultural resources, hazardous materials/wastes, geologic resources, noise and energy resources, surface water resources, floodplains, wetlands, threatened and endangered species, recreation,	

d.	(1) TITLE AND LOCATION (City and State) Wetland Mitigation Re-Design/Implementation Fraziers Bottom, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2012	CONSTRUCTION (If Applicable)

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm
Conducted hydrological assessment of an existing wetland mitigation project. Assessment conducted to determine short-comings of previous design by another firm. Identified topographic and hydrologic barriers within the mitigation cells. Redesigned mitigation cells to enhance surface water movement and infiltration within the mitigation cells to allow greater development of hydrophytic vegetation.	

e.	(1) TITLE AND LOCATION (City and State) Groundwater Data Statistical Analysis Tucker County, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES On-going	CONSTRUCTION (If Applicable)

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm
Conduct statistical analysis of groundwater quality data, current and historical, to assess integrity of landfill cells. The groundwater data were evaluated for impacts related to the landfill. West Virginia regulations (§33-4.11.a.6) provide for a variety of statistical evaluation techniques for the evaluation of groundwater data. Intra-well statistical calculations are the statistical method implemented at TCL. The statistical analysis program used to analyze inorganic parameters is DUMPStat (Downgradient Upgradient Monitoring Program Statistics). The Shewhart-CUSUM control charts were used for intra- and inter-well analyses.	

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one section E for each key person.)

12. NAME N. Johan Anestad, PE		13. ROLE IN THIS CONTRACT Hydrology & Hydraulics		14. YEARS EXPERIENCE	
				A. TOTAL 18	B. WITH CURRENT FIRM 16
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (East Norriton, PA)					
16. EDUCATION (degree and specialization) MSCE/1998/Lehigh University BSCE/1993/Lehigh University			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline) Professional Engineer: PA		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Special training in AutoCAD, USACE HEC-HMS and HEC-RAS, HAESTED Methods TR-55, HEC-1, HEC-2, Boss DAMBRK Slope-W. Member of Association of State Dam Safety Officials (ASDSO).					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) DASNY State-Wide Dam Safety Program (Multiple Locations, Central and Adirondack Regions of New York)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Papish Pond: 2014; Oneida Dam: 2015; Lows Lake: 2016	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Technical Associate - Developed hydrologic and hydraulic models for five dams owned and operated by the State through a contract with the DASNY. The models were used to evaluate the dam's capacity to pass their respective Spillway Design Floods (SDF); to perform dam breach analyses; and to generate inundation mapping. Project scope included developing the SDF, performing dam breach analyses and incremental hazard evaluations, developing inundation maps, performing dam safety inspections and conducting engineering assessments, and developing emergency action plans and inspection & maintenance plans.					
b.	(1) TITLE AND LOCATION (city and state) County-Wide Dam Safety Program (Broome County, NY)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES 2014	CONSTRUCTION (IF APPLICABLE)	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Task Manager and Technical Reviewer- Developed a program to bring 23 dams into compliance with NYSDEC Dam Safety regulations. Dam safety requirements were prioritized by the NYSDEC-established time frames and the dams were prioritized by hazard classification. The resulting phased program allowed for development of Emergency Action Plans in the first year and Engineering Assessments for the 23 dams over the next four years.					
c.	(1) TITLE AND LOCATION (city and state) Hydrologic and Hydraulic Analyses of Garrison's Lake and Hudson's Pond Dams (Smyrna and Lincoln, DE)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES 2013	CONSTRUCTION (IF APPLICABLE)	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Task Manager and Technical Reviewer- Project included hydrologic, hydraulic, and dam break analyses of two dams to determine the appropriate SDF and hazard classification for each structure. The analyses were performed using ArcGIS, HEC-HMS and HEC-RAS software and included field data acquisition and parameter verification. The results of the analyses were presented in letter reports to the DNREC.					
d.	(1) TITLE AND LOCATION (city and state) USACE Philadelphia & New York Districts Picatinny Arsenal Dam Upgrades (Dover, NJ)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES 2013	CONSTRUCTION (IF APPLICABLE) 2012	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Project Engineer - Prepared a Preliminary Design for upgrades and repairs of two high hazard dams. Performed geotechnical and forensic concrete investigations for structural stability analyses. Prepared Incremental Hazard Evaluations to select SDF as the basis for design of improvements, completed 90% and 100% design deliverables, and provided construction administration services.					
e.	(1) TITLE AND LOCATION (city and state) Philadelphia Water Dept. Engineering Services for Dams & Reservoirs (Philadelphia, PA)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Various	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Lead Hydrologic/Hydraulics Engineer – Improvements included dam design modifications to meet FERC stability requirements; installation of a sluiceway for sediment and debris management; hydraulic engineering design of spillway and sluiceway/energy dissipation structure; hydraulic modeling of the new intake/Manayunk Canal to identify infrastructure improvements to provide hydraulic flushing; and development of a canal operations plan.					

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one section E for each key person.)

12. NAME Vinoth K. Muthia, EIT		13. ROLE IN THIS CONTRACT Hydrology & Hydraulics		14. YEARS EXPERIENCE	
				A. TOTAL 3	B. WITH CURRENT FIRM 3
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (East Norriton, PA)					
16. EDUCATION (degree and specialization) BS/2012/ Civil Engineering; The Pennsylvania State University			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline) Engineer-In-Training: PA		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Special training Civil 3D 2014 and ArcMap 10. Familiar with software, including: USACE HEC-HMS and HEC-RAS; NRCS SITES; Slope/W; and Microsoft VBA. Member of Association of State Dam Safety Officials (ASDSO), Committee on Education Outreach, and Chair United States Society on Dams (USSD)					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) DNREC Dams Improvement Program (Kent & Sussex Counties, DE)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) 2 dams scheduled 2015, the other 6 scheduled for 2016/17	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Engineer – Performed hydrologic and hydraulic analyses, including spillway capacity and hazard assessments of various dams owned, operated, and regulated by the state. Modeled dam failures using HEC-HMS and downstream flooding using HEC-RAS. Summarized analyses in letter reports and contributed to conceptual design alternatives. The overall project includes site investigations, field surveys, and preliminary and final designs for 8 dams, including installation of operable gates at existing or new outlet structures, repair/replacement of concrete structures/ spillways, shoreline protection, including subsurface investigations, hydrologic/hydraulic analyses, and updating EAPs					
b.	(1) TITLE AND LOCATION (city and state) County-Wide Dam Safety Program (Broome County, NY)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES 2014	CONSTRUCTION (IF APPLICABLE)	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Engineer- Performed visual inspections, data review, and spillway capacity assessments and wrote engineering assessment reports for 16 Natural Resources Conservation Services (NRCS) flood control dams, owned and operated by the county. Performed or contributed to SITES analyses. The program brought 23 dams into compliance with NYSDEC Dam Safety regulations. Dam safety requirements were prioritized by the NYSDEC-established time frames and the dams were prioritized by hazard classification. The resulting program allowed for development of EAPs in the first year and Engineering Assessments for the 23 dams over the next four years.					
c.	(1) TITLE AND LOCATION (city and state) DASNY State-Wide Dam Safety Program (Multiple Locations, Central and Adirondack Regions of New York)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Papish Pond: 2014; Oneida Dam: 2015; Lows Lake: 2016	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Engineer- Performed hydrologic and hydraulic analyses, including spillway capacity and hazard assessments of various dams in Central New York and the Hudson Valley to bring them into compliance with New York State Department of Environmental Conservation (NYSDEC) regulations for dam safety. Modeled dam failures using HEC-HMS and downstream flooding using HEC-RAS. Contributed to engineering assessments, inundation mapping, and the development of conceptual alternatives. Dams included the Bog River Dam, Lows Lake Dam, Oneida Hatchery Dam, Papish Pond Dam, and Onondaga Dam.					
d.	(1) TITLE AND LOCATION (city and state) Philadelphia Water Dept. Engineering Services for Dams & Reservoirs (Philadelphia, PA)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Various	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Engineer- Performed visual inspections and prepared annual inspection reports in accordance with Pennsylvania Department of Environmental Protection (DEP) guidelines. Contributed to the development of Emergency Action Plans and state and federal permitting packages. O'Brien & Gere has been providing dam safety services for 8 reservoirs in the PWD water supply system for over 25 years. Projects have included subsurface investigations for slope stability and seepage analyses, underwater inspections, annual dam safety inspections, preparation of EAPs and Operation, Maintenance & Inspection Manuals, and design and construction administration for modifications to the dams.					

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one section E for each key person.)

12. NAME Dreher Whetstone, PE		13. ROLE IN THIS CONTRACT Geotech		14. YEARS EXPERIENCE	
				A. TOTAL 22	B. WITH CURRENT FIRM 6
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (East Norriton, PA)					
16. EDUCATION (degree and specialization) BS/1991/Civil Engineering; University of South Carolina			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline) Professional Engineer: PA		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Member of American Society of Civil Engineers (ASCE), Philadelphia Branch, American Society of Civil Engineers (ASCE), Geo-Institute, and Deep Foundations Institute.					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) DASNY State-Wide Dam Safety Program; (Central and Adirondack Regions of New York State)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Papish Pond: 2014; Oneida Dam: 2015; Lows Lake: 2016	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Geotechnical Engineer- Developed documents for compliance with NYSDEC dam safety regulations for five dams owned and operated by the State of New York, through a contract with the DASNY. Hydrologic and hydraulic models were used to evaluate the Spillway Design Flood (SDF) for each dam; to perform dam breach analyses; and to generate inundation mapping. In addition, the project scope includes performing dam safety inspections, conducting engineering assessments, developing Emergency Action Plans and Operation, Maintenance & Inspection Manuals, and evaluation of alternatives, development of cost estimates, design and construction administration of the proposed improvements.		<input checked="" type="checkbox"/> check if project performed with current firm		
b.	(1) TITLE AND LOCATION (city and state) USEPA National Coal Ash Impoundment Dam Safety Assessments; (Locations in WV, AL, KY, IL, IN, MI, MO, MS, OH, PA, TX, UT, VA)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE)	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Geotechnical Engineer - Conducted assessments and prepared inspection reports on behalf of USEPA for coal combustion residuals impoundments owned by various power companies, including the WH Zimmer Power Plant in Moscow, Ohio. Due to the Tennessee Valley Authority 2008 coal ash dike failure, the EPA has initiated a national coal ash impoundment dam safety assessment program to prevent a similar failure or improper release of impounded slurry at other electric utility facilities. To date, O'Brien & Gere has conducted on-site inspections and dam safety assessments of coal ash impoundment dams at 33 sites located in 13 U.S. states.		<input checked="" type="checkbox"/> check if project performed with current firm		
c.	(1) TITLE AND LOCATION (city and state) Philadelphia Water Dept. Engineering Services for Dams & Reservoirs (Philadelphia, PA)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Ongoing	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Geotechnical Engineer - O'Brien & Gere has been providing dam safety services for 8 reservoirs in the PWD water supply system for over 25 years. Projects have included subsurface investigations for slope stability and seepage analyses, underwater inspections, annual dam safety inspections, preparation of Emergency Action Plans and Operation, Maintenance & Inspection Manuals, and design and construction administration for modifications to the dams.		<input checked="" type="checkbox"/> check if project performed with current firm		
d.	(1) TITLE AND LOCATION (city and state) USACE Philadelphia & New York Districts, Picatinny Arsenal Dam Upgrades (Dover, NJ)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) 2012	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Structural Engineer – Prepared designs for upgrades and repairs of two high hazard dams. Performed geotechnical and forensic concrete investigations for spillway structural stability and embankment slope stability analyses. Performed Incremental Hazard Evaluations to select Spillway Design Floods as the basis for design of improvements. Completed design drawings and specifications in three phases, including estimates of the probable construction cost. Assisted in obtaining Dam Safety and Freshwater Wetlands permits. Assisted in construction procurement and provided Archaeological monitoring, office engineering support and periodic inspection during construction.		<input checked="" type="checkbox"/> check if project performed with current firm		

12. NAME John James, PE	13. ROLE IN THIS CONTRACT Geotech	14. YEARS EXPERIENCE	
		a. TOTAL 47	b. WITH CURRENT FIRM 11
15. FIRM NAME AND LOCATION <i>(City and State)</i> TERRADON Corporation (Poca, WV)			
16. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> BS, Civil Engineering		17. CURRENT PROFESSIONAL REGISTRATION <i>(STATE AND DISCIPLINE)</i> Professional Engineer, WV, NC	
18. OTHER PROFESSIONAL QUALIFICATIONS <i>(Publications, Organizations, Training, Awards, etc.)</i> John James is a Senior Geotechnical Engineer for: various earth and rock fill dams, numerous foundation investigations, studies and designs for landfills and environmental facilities, surface and ground water studies, remediation studies, foundation investigations and designs ranging in size from houses to major industrial complexes, storm drainage facilities, airport facilities, landslide analysis and correction, and forensic engineering. James specializes in innovative and cost-saving concepts for client projects.			

19. RELEVANT PROJECTS

a.	(1) TITLE AND LOCATION <i>(City and State)</i> Upper Glade Creek Water Supply Dam Beckley, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2011	CONSTRUCTION (if Applicable) 2014
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm	
	<p>Geotechnical Engineer. The \$205K project included providing an additional 15 days of storage for drought conditions for Beckley Water Company. The selected water storage facilities included the Lower and Upper Glade Creek Dams. The study/design was complicated by the necessity to route design floods through the upstream Flattop Lake. The Lower Dam is a concrete weir type dam, and the impoundment is bisected by WV Route 3. The upper dam is a 76 foot high earth and rock fill dam built circa 1977. The study phase included: 1) evaluating the installation of automatic gates on the lower water supply dam, which would be operated during "normal" flood events to prevent overtopping of WV Route 3 during flood events less than 100 years, 2) provide storage during drought conditions, 3) increasing the pool volume by dredging and excavating below the pool level, 4) constructing another dam on water company property, and 5) using an innovative method of raising of the lake level in the upper impoundment. Cost analysis indicated that raising the lake level in the upper reservoir would be the least expensive.</p>		
b.	(1) TITLE AND LOCATION <i>(City and State)</i> Chatham Lake Dam Glade Springs, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2003-2004	CONSTRUCTION (if Applicable) 2004
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm	
	<p>The \$1.3 million dam project was complicated by the development of residential properties around an upscale golf resort in southern West Virginia. Initial involvement included planning, which evolved to combine three smaller dams and lakes to one large dam and lake. The chosen design resulted in a 70' high dam with one 70 acre lake. Studies included water balance studies including low flow augmentation requirements and golf course irrigation requirements. It was determined that low flow augmentation requirements, irrigation needs and peak summer evaporation rates were each about equal. After selecting appropriate lake and dam sizing, the dam was designed with safety and cost effectiveness paramount.</p>		
c.	(1) TITLE AND LOCATION <i>(City and State)</i> Dawson Dam Dawson, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2009	CONSTRUCTION (if Applicable) 2009
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm	
	<p>The developer desired a lake as a design feature for a residential development in Dawson, Greenbrier County, WV. The initial scope included a study of dam height/cost/lake area and included some non-engineering aspects as aesthetic details. As a residential feature, the developer was interested in the lake area as opposed to water volume. After the lake area was chosen, TERRADON designed the dam to be as economical as possible and included such innovative concepts as making a portion of the emergency spillway a wetland as part of necessary mitigation. TERRADON also provided QC and construction certification for the Dawson Dam and provided the required dam safety inspections since the completion of construction. Services included the development of an Emergency Action Plan and an Operation and Maintenance Plan for the Dawson Dam. Total construction costs totaled \$350K.</p>		
d.	(1) TITLE AND LOCATION <i>(City and State)</i> Water Supply Dams, Design and Upgrade West Virginia	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES Various	CONSTRUCTION (if Applicable) Various
	(3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm	
	<p>Provided upgrade and design services for various water supply dams throughout West Virginia. Projects include: Upper & Lower Dog Run Dams, Salem, West Virginia; Key Dam, Bluefield, West Virginia; and Weston Water Supply Dam, Weston, West Virginia. Geotechnical analysis and studies included: seismic analysis and monitoring; seepage analysis and corrective design; and reconstruction and structural design components.</p>		

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one section E for each key person.)

12. NAME Dana R. Pizarro, PE		13. ROLE IN THIS CONTRACT Gates & Mechanical		14. YEARS EXPERIENCE	
				A. TOTAL 40	B. WITH CURRENT FIRM 39
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (East Norriton, PA)					
16. EDUCATION (degree and specialization) MS/1976/Civil Engineering; University of Delaware BS/1973/Civil Engineering; Lehigh University			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline) Professional Engineer: DE, PA, MD, NC, NJ, VA		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Member of Association of State Dam Safety Officials (ASDSO), United States Society on Dams (USSD). American Waterworks Association, Water Environment Federation, Pennsylvania Water Environment Association, and Society of American Military Engineers, Board Member of Water Resources Association of the Delaware River Basin. O'Brien & Gere's Samuel W. Williams Engineering Excellence Award, O'Brien & Gere, 2006.					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) DNREC Dams Improvement Program (Kent & Sussex Counties, DE)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) 2 dams scheduled 2015, the other 6 scheduled for 2016/17	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Lead Civil/Mechanical Engineer – Site investigations, field surveys, and preliminary and final designs for 8 dams, including installation of operable gates at existing or new outlet structures, repair/replacement of concrete structures/ spillways, shoreline protection, including subsurface investigations, hydrologic/hydraulic analyses, and updating EAPs.		<input checked="" type="checkbox"/>		check if project performed with current firm
b.	(1) TITLE AND LOCATION (city and state) Philadelphia Water Dept., Flat Rock Dam Improvements and Restoration of Manayunk Canal (Philadelphia, PA)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Scheduled for 2016	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager – Flat Rock Dam improvements included design modifications to the dam to meet FERC stability requirements and installation of a sluiceway for sediment and debris management; development of conceptual designs and design of diversion sheet pile wall intake structure for the Manayunk Canal to introduce flow from the dam pool back into the canal to improve water quality and aesthetics; design of gate systems and operators and trash rack/stop log systems; hydraulic modeling of the Manayunk Canal to identify infrastructure improvements to the canal to provide hydraulic flushing.		<input checked="" type="checkbox"/>		check if project performed with current firm
c.	(1) TITLE AND LOCATION (city and state) Dundee Water Power and Land Co., Rehabilitation of the Dundee Dam and Canal (Clifton, NJ)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES 2011	CONSTRUCTION (IF APPLICABLE) 2008	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Officer/ Manager - Directed and managed a multi-element program. Technical support and negotiations to the client and its counsel regarding NJDOT "property taking" of Dundee Canal for Route 21 Extension Project. Services included hydraulic/hydrologic analyses of impacts of the project, review of designs, clarifications of potential flooding issues in the Dundee Canal, contaminated canal sediment issues, wetlands/open waters, and permitting issues. The project also included development of conceptual design alternatives and cost estimates for rehabilitation and stabilization of the dam, including lowering the main spillway, under Federal Energy Regulatory Commission (FERC) guidelines. Dam elements included main and auxiliary spillways. Services included coordination and negotiations with FERC, NJDEP Land Use Regulatory Program (LURP), NJDEP Dam Safety Section, NJDEP Fish & Wildlife, U.S. Fish & Wildlife Service, and National Marine Fisheries Services.		<input checked="" type="checkbox"/>		check if project performed with current firm
d.	(1) TITLE AND LOCATION (city and state) USEPA National Coal Ash Impoundment Dam Safety Assessments; (Locations in WV, AL, KY, IL, IN, MI, MO, MS, OH, PA, TX, UT, VA)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE)	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE Lead Engineer - Conducted assessments and prepared inspection reports on behalf of USEPA for coal combustion residuals impoundments at two sites owned power companies in Virginia. Conducted on-site inspections and dam safety assessments of these coal ash impoundment dams, including the outlet works and control gates.		<input checked="" type="checkbox"/>		check if project performed with current firm

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one section E for each key person.)

12. NAME Edward G. Drummond		13. ROLE IN THIS CONTRACT Structural		14. YEARS EXPERIENCE	
				A. TOTAL 25	B. WITH CURRENT FIRM 14
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (East Norriton, PA)					
16. EDUCATION (degree and specialization) BS/1989/Civil and Construction Engineering; Temple University BS/1983/Animal Biological Science; Penn State University			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline)		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Special training: O'Brien & Gere Project Management Boot Camp; Structural computer programs including STAAD Pro, Stardyne, GT-STRUDL, SIMFLEX, CAESAR II, AutoCAD R14; 40 Hour OSHA Training and 8 Hour OSHA Refresher.					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) DASNY State-Wide Dam Safety Program (Central and Adirondack Regions of New York State)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Papish Pond: 2014; Oneida Dam: 2015; Lows Lake: 2016	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Lead Structural Engineer – Supervised visual inspection, field investigations, and structural stability analyses for two concrete dams and evaluated alternatives for upgrading the structures to current dam safety standards. Alternatives included shear blocks with post-tensioned anchors, mass concrete infilling for Ambersen dam, piers socketed to bedrock for support of existing buttresses, and complete dam replacement with RCC or concrete gravity structure. Project included developing SDFs, performing dam breach analyses and IHEs, developing inundation maps, performing dam safety inspections and conducting EAs, and developing EAPs and I&M plans.					
b.	(1) TITLE AND LOCATION (city and state) DNREC Dams Improvement Program (Kent & Sussex Counties, DE)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) 2 dams scheduled 2015, the other 6 scheduled for 2016/17	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Lead Structural Engineer – Supervision of structural portion of site investigations, field surveys, preliminary and final designs for 8 dams for installation of operable gates and repair/ replacement of concrete structures/ spillways and shoreline protection including subsurface investigations and hydrologic/hydraulic analyses.					
c.	(1) TITLE AND LOCATION (city and state) Philadelphia Water Dept. Engineering Services for Dams & Reservoirs (Philadelphia, PA)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Various	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Lead Structural Engineer – Investigation and design of structural modifications for the Belmont Raw Water Basin Dividing Dike, Baxter Raw Water Basin loading pier, and Flat Rock Dam/Manayunk Canal intake wall and diversion facilities. Flat Rock Dam improvements included design modifications to the dam to meet FERC stability requirements and installation of a sluiceway for sediment and debris management; development of conceptual designs and design of diversion sheet pile wall intake structure for the Manayunk Canal to introduce flow from the dam pool back into the canal to improve water quality and aesthetics; design of gate systems and operators and screen/ log systems; hydraulic modeling of the Manayunk Canal to identify infrastructure improvements to the canal to provide hydraulic flushing; permitting assistance for PADEP and USACE permits; and development of a dredging/ sediment disposal plan and a canal operations plan.					
d.	(1) TITLE AND LOCATION (city and state) USACE New York District, Mine Lake Dam Repair (West Point, NY)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES 2014	CONSTRUCTION (IF APPLICABLE)	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Project Manager - Provided engineering services related to the design for the upgrade and repair of a gravity dam consisting of stone masonry and grouted rubble core constructed in 1846. A structural stability analysis determined that portions of the Dam did not meet current USACE guidelines governing required factors of safety. Project included structural inspection and detailed structural stability analyses for existing and proposed structures; design of a reconfigured low level outlet pipe and a concrete control valve chamber; design of structural fortifications consisting of mass concrete overlays and strap beams supported by concrete counterforts across the downstream face to bring the dam into compliance with USACE stability criteria.					

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(Complete one section E for each key person.)

12. NAME Mark A. Di Lullo, PE		13. ROLE IN THIS CONTRACT Structural		14. YEARS EXPERIENCE	
				A. TOTAL 13	B. WITH CURRENT FIRM 7
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (East Norriton, PA)					
16. EDUCATION (degree and specialization) 2002/BS/Civil & Structural Engineering; The Pennsylvania State University			17. CURRENT PROFESSIONAL REGISTRATION (state and discipline) Professional Engineer: PA		
18. OTHER PROFESSIONAL QUALIFICATIONS (publications, organizations, training, awards, etc.) Special training in Enercalc, STADD.Pro, and AutoCAD.					
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) DASNY State-Wide Dam Safety Program; (Central and Adirondack Regions of New York State)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Papish Pond: 2014; Oneida Dam: 2015; Lows Lake: 2016	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Structural Engineer- Developed documents for compliance with NYSDEC dam safety regulations for five dams owned and operated by the State of New York, through a contract with the DASNY. Hydrologic and hydraulic models were used to evaluate the Spillway Design Flood (SDF) for each dam; to perform dam breach analyses; and to generate inundation mapping. In addition, the project scope includes performing dam safety inspections, conducting engineering assessments, developing Emergency Action Plans and Operation, Maintenance & Inspection Manuals, and evaluation of alternatives, development of cost estimates, design and construction administration of the proposed improvements.					
b.	(1) TITLE AND LOCATION (city and state) Philadelphia Water Dept. Engineering Services for Dams & Reservoirs (Philadelphia, PA)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Ongoing	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Structural Engineer – O'Brien & Gere has been providing dam safety services for 8 reservoirs in the PWD water supply system for over 25 years. Projects have included subsurface investigations for slope stability and seepage analyses, underwater inspections, annual dam safety inspections, preparation of Emergency Action Plans and Operation, Maintenance & Inspection Manuals, and design and construction administration for modifications to the dams.					
c.	(1) TITLE AND LOCATION (city and state) USACE Philadelphia & New York Districts, Picatinny Arsenal Dam Upgrades (Dover, NJ)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) 2012	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Structural Engineer – Prepared designs for upgrades and repairs of two high hazard dams. Performed geotechnical and forensic concrete investigations for spillway structural stability and embankment slope stability analyses. Performed Incremental Hazard Evaluations to select Spillway Design Floods as the basis for design of improvements. Completed design drawings and specifications in three phases, including estimates of the probable construction cost. Assisted in obtaining Dam Safety and Freshwater Wetlands permits. Assisted in construction procurement and provided Archaeological monitoring, office engineering support and periodic inspection during construction.					
d.	(1) TITLE AND LOCATION (city and state) DNREC Dams Improvement Program (Kent & Sussex Counties, DE)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) 2 dams scheduled 2015, the other 6 scheduled for 2016/17	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Structural Engineer – Supervision of structural portion of site investigations, field surveys, preliminary and final designs for 8 dams for installation of operable gates at existing or new outlet structures and repair/replacement of concrete structures/spillways and shoreline protection including subsurface investigations and hydrologic/hydraulic analyses. Operable gates will provide lake/pond level control for aquatic/ recreational purposes and/ or low level outlets for the dams.					

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT

(Complete one section E for each key person.)

12. NAME James M. Quinn		13. ROLE IN THIS CONTRACT CM/Cost Estimating		14. YEARS EXPERIENCE	
				A. TOTAL 32	B. WITH CURRENT FIRM 3
15. FIRM NAME AND LOCATION (city and state) O'Brien & Gere (East Norriton, PA)					
16. EDUCATION (degree and specialization) BS/1982/Civil Engineering; Drexel University MBA/1990/Administrative Management; St. Joseph's University				17. CURRENT PROFESSIONAL REGISTRATION (state and discipline)	
19. RELEVANT PROJECTS					
a.	(1) TITLE AND LOCATION (city and state) DASNY State-Wide Dam Safety Program; (Central and Adirondack Regions of New York State)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Papish Pond: 2014; Oneida Dam: 2015; Lows Lake: 2016	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Constructability Review/Cost Estimation – Assisted with development of concepts for dam modifications and prepared construction cost estimates to assist with evaluation of alternatives for improvements to four dams under this program. Project scope included developing the spillway design flood, performing dam breach analyses and incremental hazard evaluations, developing inundation maps, performing dam safety inspections and conducting engineering assessments, and developing EAPs and inspection & maintenance plans.					
b.	(1) TITLE AND LOCATION (city and state) DNREC Dams Improvement Program (Kent & Sussex Counties, DE)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) 2 dams scheduled 2015, the other 6 scheduled for 2016/17	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Construction Manager – Performed project pre-planning alternative reviews with budget assessments to address deficiencies in 8 dams throughout the State of DE. An important element of the program was the creation of a matrix to evaluate the repairs on several bases, including urgency, related repairs, proximity to other sites, maintenance of roadway and train traffic, temporary water diversion measures, and projected costs. Design intent was to incorporate as many common elements as practical and to include cost-effective features to maximize the service life of the new and reconstructed structures.					
c.	(1) TITLE AND LOCATION (city and state) Philadelphia Water Dept. Engineering Services for Dams & Reservoirs (Philadelphia, PA)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Ongoing	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Construction Administration/Cost Estimating – Developed construction cost estimates and project schedules for the Belmont Raw Water Basin and Baxter Raw Water Basin Improvements projects and the Flat Rock Dam/Manayunk Canal Restoration project. Serving as Construction Engineer for ongoing Belmont RWB Dividing Dike construction and working with the PWD Construction Branch to maintain QA/QC on project.					
d.	(1) TITLE AND LOCATION (city and state) New Castle Conservation District, Delaware Bay Flood Dikes Improvement Program (New Castle, DE)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) 2014	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Constructability Review/Cost Estimation – Performed project pre-planning alternative reviews with budget assessments to address deficiencies in a group of levees that protect New Castle County from Delaware Bay flooding. Project elements include clearing and grubbing, excavation and embankment, replacement of riprap shore protection including stone bedding and geotextile fabric, reconstruction of aggregate and bituminous roadways, and reconstruction of stabilized vegetated slopes.					
e.	(1) TITLE AND LOCATION (city and state) City of Ithaca, Potter's Falls Dam Modification Program (New York)		(2) YEAR COMPLETED		
			PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE)	
	(3) BRIEF DESCRIPTION (brief scope, size, cost, etc.) AND SPECIFIC ROLE		<input checked="" type="checkbox"/> check if project performed with current firm		
Constructability Review/Cost Estimation – Conducted a constructability review including budget assessments for various alternatives for the design of selective improvements to the existing dam. Design included water diversion measures, selective and bulk demolition, selective earthwork and grading, mass and structural concrete reconstruction and repairs, slope protection, and water process piping improvements.					

12. NAME Mike Ward	13. ROLE IN THIS CONTRACT Construction Inspector	14. YEARS EXPERIENCE	
		a. TOTAL 30	b. WITH CURRENT FIRM 5
15. FIRM NAME AND LOCATION (City and State) TERRADON Corporation (Nitro, West Virginia)			
16. EDUCATION (DEGREE AND SPECIALIZATION) B.A. Accounting, Marshall University Engineering and Construction Management Courses, West Virginia State University		17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Bridgemont Engineering Technician Level III WVDOH Certifications for concrete, soil compaction, aggregate technician Level II post tension steel Inspector	
18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Michael Ward serves as a Senior Field Technician for TERRADON Corporation. He has provided construction management, construction observation, testing, and inspection services in the engineering industry for 30 years. Ward serves as a third-party independent inspector, or the owner's representative for municipal, commercial and industrial projects. He has extensive experience in heavy highway construction, underground utilities, soils, asphalt, concrete, grout, auger cast piles, and anchor testing.			

19. RELEVANT PROJECTS

a.	(1) TITLE AND LOCATION (City and State) The Summit Bechtel Family National Scouting Reserve Mt. Hope, WV	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2009 - 2013	CONSTRUCTION (If Applicable) 2009 - 2013
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm	
	As the Senior Inspector, provided QA/QC inspection services during the construction of four (4) earthen dams. Inspection consisted of the observation of fill placement, soil compaction testing of fill, observation of concrete placement for spillways and strength testing of concrete. In addition, Mr. Ward performed evaluations of soil borrow areas used as fill material for the construction of these four (4) dams. Daily and weekly inspection logs were completed and turned into the client for documentation of construction activities and progress. In addition, the Senior Inspector led the construction inspection team which oversaw QA/QC on 14 miles of new road construction built to WVDOH specifications; installation of 64 miles of underground utilities, including 21 miles of waterline, 24 miles of sewer line, 17 miles of electric conduit, and 2 miles of gas lines; installation of the largest grey/ Blackwater sewage system east of the Mississippi. The camp also had 600 acres cleared, grubbed and graded with 28 miles of drainage swales, including erosion and sediment control best management practices. The work also included the testing of over 7,000 CY of structural concrete and over 5 Million CY of mass excavation and compaction. In addition 4 earthen dams were built with over 800,000 CY of embankment.		
b.	(1) TITLE AND LOCATION (City and State) Above Ground Storage Tank Inspections (Senate Bill 373 Compliance)	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 2014	CONSTRUCTION (If Applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input checked="" type="checkbox"/> Check if project performed with current firm	
	Senior Inspector for approximately 1,800 Aboveground Storage Tank (AST) inspections. Task included navigation to and conducting field inspections of AST's according to the specifications of WVDEP. Tanks were certified as Fit for Service, Fit for Service but Repairs Required, or Not Fit for Service. The field inspections also included marking each AST with the company emergency contact number, WVDEP's emergency spill number, and the WVDEP tank identification number.		
c.	(1) TITLE AND LOCATION (City and State) City of Dunbar Wastewater Treatment Plant	(2) YEAR COMPLETED	
		PROFESSIONAL SERVICES 1999 - 2001	CONSTRUCTION (If Applicable)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE	<input type="checkbox"/> Check if project performed with current firm	
	Construction Manager and Field Inspector 10M Wastewater treatment plant and storm and sanitary line upgrades for the City of Dunbar, WV and the West Virginia Department of Environmental Protection. Contracts 2&3 installation of storm conduit and wastewater piping Inspection of 50,000 ft. of waste water and sanitary piping. 48" to 6". Excavation depths 6' to 28' monitoring excavation, backfill and compaction procedures and road repairs to ensure compliance with approved plans and specifications, inspection for alignment, grade and leakage. Extensive documentation and resolve of any complaints concerning construction activities.		

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAMS QUALIFICATIONS FOR THIS CONTRACT (Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one section F for each project.)	20. EXAMPLE PROJECT KEY NUMBER <div style="text-align: center; font-size: 1.2em; font-weight: bold;">1</div>
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21. TITLE AND LOCATION (CITY AND STATE) Broome County Dam Safety Program (Binghamton, NY)	22. YEAR COMPLETED PROFESSIONAL SERVICES 2013 CONSTRUCTION (IF APPLICABLE)
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23. PROJECT OWNER'S INFORMATION		
PROJECT OWNER Broome County	POINT OF CONTACT NAME Patrick Hogan	POINT OF CONTACT TELEPHONE NUMBER 607-778-2449

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

Broome County currently owns 23 dams that are regulated by the New York State Department of Environmental Conservation (NYSDEC) Division of Water, Bureau of Flood Protection, Dam Safety Section.

Most of the County dams were designed and constructed by the Natural Resources Conservation Service (NRCS), who serves in an advisory capacity to the County and assists with annual inspections and development of certain dam safety documents. However, these dams also need to be brought into compliance with the newly revised NYSDEC regulations for dam safety (6 NYCRR Part 673). O'Brien & Gere was retained to work with the NRCS to develop a comprehensive dam safety program for the 23 dams which are the County's responsibility.



The dam safety program consists of performing the following tasks for some or all of the dams:

- Prepare preliminary planning documents
- Develop Emergency Action Plans
- Review existing Inspection & Maintenance Plans
- Perform Dam Safety Inspections
- Conduct Engineering Assessments
- Provide as-needed assistance to the County for dam-safety related issues

O'Brien & Gere performed hydrologic and hydraulic analyses using the USACE HEC-1 and HEC-HMS computer models to develop inflow hydrographs and evaluate spillway performance in the Spillway Design Flood. Dam Breach analysis and downstream flood routing was performed using HEC-RAS to map inundation areas for the EAPs. The HEC-RAS models and the inundation mapping were developed from a topographic model generated from LiDAR data provided by the County. The Engineering Assessments identified deficiencies for each of the dams and provided recommendations for additional investigations or repairs that should be undertaken, including outlet conduit inspections for most of these dams and SITES analyses for several dams to evaluate erosion potential of the earth emergency spillway sections. These investigations and analyses were conducted under a separate project. Engineering fees for this initial phase of the program were approximately \$500,000.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT				
a.	(1) FIRM NAME O'Brien & Gere	<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> (2) FIRM LOCATION (city and state) East Norriton, PA </td> <td style="width: 50%; padding: 5px;"> (3) ROLE Engineering Services </td> </tr> </table>	(2) FIRM LOCATION (city and state) East Norriton, PA	(3) ROLE Engineering Services
(2) FIRM LOCATION (city and state) East Norriton, PA	(3) ROLE Engineering Services			

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAMS QUALIFICATIONS FOR THIS CONTRACT (Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one section F for each project.)	20. EXAMPLE PROJECT KEY NUMBER <div style="text-align: center; font-size: 1.2em; font-weight: bold;">2</div>
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21. TITLE AND LOCATION (CITY AND STATE) Broome County Dam Investigations (Binghamton, NY)	22. YEAR COMPLETED PROFESSIONAL SERVICES: Ongoing CONSTRUCTION (IF APPLICABLE):
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23. PROJECT OWNER'S INFORMATION		
PROJECT OWNER Broome County	POINT OF CONTACT NAME Patrick Hogan	POINT OF CONTACT TELEPHONE NUMBER 607-778-2449

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

O'Brien & Gere developed a dam safety program to bring Broome County's 20 NRCS flood control dams into compliance with NYSDEC and federal dam safety standards. Under the Engineering Assessment phase of this program, recommendations were provided for additional engineering analyses where needed and for remediation of deficient conditions that had been identified. These recommendations included inspection of the low-level outlet conduits for many of these dams and conducting geotechnical investigations and hydraulic analysis of several of the emergency spillways by means of the SITES program to evaluate erodibility of the outlet channels during major storm events, as described below.



Outlet Conduit Inspections – O'Brien & Gere subcontracted Precision Industrial Maintenance, Inc. to perform televised inspections of the conduits by means of a video camera mounted on a small, track-driven, remotely operated vehicle (ROV). The ROV entered the conduits from the downstream outlets and examined the interior condition of the conduits, looking specifically for pipe misalignment and/or joint leakage or offsets. To the extent possible, the reservoirs were drawn down to accommodate the inspections. Reports were prepared to describe the inspections and any observed deficiencies, and to provide recommendations for any required repairs. The reports were appended with captioned photos of deficient conditions and video recordings of all of the inspections were submitted on CDs.



Emergency Spillway Evaluations – O'Brien & Gere initiated these evaluations by obtaining soil samples from the surface of the earth spillway channels and conducting lab testing to more accurately assess the Headcut Erodibility Index (Kh), which is a key parameter for the SITES program. Hydraulic analyses were then performed with the SITES program to estimate the flow velocities in the channels during the Spillway Design Flood which, in many cases, exceeded the limiting criteria established by NRCS during design. Shortly before these evaluations started, Tropical Storm Lee passed through Broome County and caused flooding conditions that resulted in flow through some of the emergency spillways and erosion of the outlet channels at several sites. These flows appeared to generally substantiate the results of the SITES analyses and a report was prepared that recommended evaluation of repair approaches that would minimize the potential for erosion that could threaten the integrity of the dams.



Engineering fees to date are approximately \$750,000.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
a.	(1) FIRM NAME O'Brien & Gere	(2) FIRM LOCATION (city and state) East Norriton, PA	(3) ROLE Engineering Services

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAMS QUALIFICATIONS FOR THIS CONTRACT
 (Present as many projects as requested by the agency, or 10 projects, if not specified.
 Complete one section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER
3

21. TITLE AND LOCATION (CITY AND STATE)

Potomac Creek Dam Nos. 1 and 2 (Stafford County, VA)

22. YEAR COMPLETED

PROFESSIONAL SERVICES

Ongoing

CONSTRUCTION (IF APPLICABLE)

n/a

23. PROJECT OWNER'S INFORMATION

PROJECT OWNER

Stafford County

POINT OF CONTACT NAME

Janet L. Spencer, PE

POINT OF CONTACT TELEPHONE NUMBER

(540) 658-8620

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

The County of Stafford retained O'Brien & Gere for renewal of the Operation & Maintenance (O&M) Certificates for Potomac Creek Dams #1 (NRCS structure) and #2. The project included visual inspection and preparation of annual inspection reports for both dams in accordance with DCR's Virginia Impounding Structure Regulations (Dam Safety), performing Spillway Design Flood (SDF) analyses, developing inundation mapping, preparation of updated Emergency Action Plans (EAPs) and completion of the O&M Certificate applications. Following completion of the SDF analyses, the need/benefit of conducting Incremental Damage Analyses (IDA) for the dams was also assessed.

O'Brien & Gere is currently investigating the performance of the two emergency spillways for Potomac Creek Dam No. 1 during its SDF, using the NRCS SITES computer program to estimate the extent of erosion that would occur during a storm of this magnitude. O'Brien & Gere used the SDF hydrograph developed in the previous phase of work, as-built drawings of the geometry of the emergency spillways and soil parameters obtained through a drilling and laboratory testing program to develop the input parameters for the SITES model.

Under an earlier project for Stafford County, OBG was involved in various stages of the upgrades and raising of the Aquia Dam (Smith Lake). Our services included planning studies, visual inspection and hydrologic, hydraulic and dam failure assessment of this originally 60-foot high, 1600-foot long water supply earth dam. A safe yield analysis and a feasibility study were performed to evaluate the technical and economic factors associated with the proposed 20-foot raising of the reservoir. Preliminary design documents were developed and permit applications were submitted for the dam raising project. Subsequent to final design, OBG provided value engineering and construction administration/inspection for the project, which ultimately included a new intake structure, conversion of the principal spillway to a low-level outlet system and the emergency spillway to the new principal spillway, placement of an RCC overlay on a portion of the earth embankment to create a new emergency spillway, and raising of the remainder of the earth embankment section.

Estimated engineering fees for the current Potomac Creek Dams project are about \$85,000.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION (city and state)	(3) ROLE
a.	O'Brien & Gere	East Norriton, PA	Consulting Engineer
b.			

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAMS QUALIFICATIONS FOR THIS CONTRACT (Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one section F for each project.)	20. EXAMPLE PROJECT KEY NUMBER <div style="text-align: center; font-weight: bold; font-size: 1.2em;">4</div>
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21. TITLE AND LOCATION (CITY AND STATE) Upgrade and Repair of Picatinny Lake and Lake Denmark Dams (Dover, NJ)	22. YEAR COMPLETED PROFESSIONAL SERVICES 2013	CONSTRUCTION (IF APPLICABLE) 2013
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23. PROJECT OWNER'S INFORMATION
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PROJECT OWNER United States Army Corps of Engineers (USACE) Philadelphia & New York Districts	POINT OF CONTACT NAME Matthew Emigholz	POINT OF CONTACT TELEPHONE NUMBER 917-790-8248
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24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)

O'Brien & Gere provided engineering services for the upgrade and repair of Picatinny Lake Dam and Lake Denmark Dam in NJ. O'Brien & Gere was retained for the preparation of construction contract plans and specifications for the upgrades and repairs and to assist in obtaining required Dam Safety and Freshwater Wetlands permits. This included review of existing studies and designs, site investigation, and design in support of meeting code compliance.

Phase I – Site Investigation and Preliminary Design and Report: Services included field and engineering investigations to develop a basis of design. Topographic surveys were performed at both dam sites providing mapping for use in detailed design. Complete hydrologic and hydraulic analyses were performed to assess the current spillway capacity of both dams and evaluate alternatives for increasing spillway capacity. Incremental Hazard Evaluations were performed to develop recommendation for an appropriate Spillway Design Flood (SDF) for each dam. With NJDEP approval, O'Brien & Gere evaluated alternates for raising the Lake Denmark Dam to confine the 100-Year Flood in the existing spillway and alternatives for safely passing approved SDF (30% PMF) at the Picatinny Lake Dam. Concrete and subsurface investigations were performed at both dams (with UXO) to provide the required data for the Slope Stability Analysis of each dam's earth embankment and Structural Stability Analyses of the spillway of the Picatinny Lake Dam, and inform the evaluation of alternatives for repairs to address structural deficiencies. Additionally, recommendations were made for a new low-level outlet system for Picatinny Lake Dam and repair of the low-level outlet system for Lake Denmark Dam. Recommendations were also made for repair of the existing sluice gates at the Picatinny Lake Dam. Estimates of the Probable Construction cost were made using MCASES (MII) to assist in selection of alternatives for detailed design.

Phase II – 90% Design Submission and Phase III – 100% Contract Documents:

- A Roller Compacted Concrete overlay for the crest and downstream face of Picatinny Lake Dam
- Spillway training walls to protect an occupied building on the dam embankment from the SDF
- Concrete repairs and upgrades to the upstream crest wall and exposed spillway surfaces
- A new siphon-operated low-level outlet for Picatinny Lake Dam
- New sluice gates at Picatinny Lake Dam
- Relocation of existing utilities and security fencing at Picatinny Lake Dam
- A stabilized toe block/dam section for the Lake Denmark Dam spillway consisting of reinforced concrete, pre-stressed rock anchors and pressure relief
- Upgrades and repairs to existing low-level outlets at Lake Denmark Dam
- Rip rap slope protection on the upstream face of the Lake Denmark Dam embankment
- Re-grading and general site improvements at both Picatinny Lake Dam and Lake Denmark Dam
- Technical Specifications were prepared using the Specs-Intact system. Final construction cost estimates were prepared using MCASES (MII). Combined costs for upgrades and repairs at the 2 dams were an estimated \$2.45M.

The Final Design was used to obtain required permits and approvals, including NJDEP Dam Safety permit, NJDEP Freshwater Wetlands permit, and Soil Erosion and Sediment Control Plan Certification by the Morris County Soil Conservation District. O'Brien & Gere assisted with the negotiation of a contract to construct the improvements awarded in 2010. During construction, O'Brien & Gere provided Archaeological monitoring of excavations due to the historical significance of the dam site in addition to supporting USACE with periodic inspections, review of submittals and response to requests for information. O'Brien & Gere updated EAPs for the dams utilizing inundation mapping prepared during design. The engineering fee through all phases of design and construction totaled \$923,000.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT		
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a.	(1) FIRM NAME O'Brien & Gere	(2) FIRM LOCATION (city and state) East Norriton, PA	(3) ROLE Engineering Services
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**F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAMS
QUALIFICATIONS FOR THIS CONTRACT**
(Present as many projects as requested by the agency, or 10 projects, if not specified.
Complete one section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER
5

21. TITLE AND LOCATION (CITY AND STATE)

Stress and Stability Assessment of Normandy Dam (Chattanooga, TN)

22. YEAR COMPLETED

PROFESSIONAL SERVICES

Ongoing

CONSTRUCTION (IF APPLICABLE)

Estimated 2016

23. PROJECT OWNER'S INFORMATION

PROJECT OWNER

Tennessee Valley Authority

POINT OF CONTACT NAME

Husein Hasan

POINT OF CONTACT TELEPHONE NUMBER

(865) 632-4194

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

O'Brien & Gere was retained by the Tennessee Valley Authority to provide a stress and stability assessment for Normandy Dam, a 125-foot high concrete gravity dam, located in Chattanooga, TN. O'Brien & Gere conducted an evaluation of original design and construction documents and developed an investigation and laboratory testing plan to develop a basis for a detailed and comprehensive stability and stress analysis. The project includes a preliminary stability analysis, sensitivity analysis and evaluation of design criteria of the concrete non-overflow and spillway sections of the dam.

Based on the results of the stability analyses, O'Brien & Gere will develop conclusions and recommendations Regarding the need for further evaluation and/or remedial measures for the dam.

Engineering fees are estimated to be at \$450,000.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION (city and state)	(3) ROLE
a.	O'Brien & Gere	East Norriton, PA	Engineering Services
b.			
c.			
d.			

**F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAMS
QUALIFICATIONS FOR THIS CONTRACT**
(Present as many projects as requested by the agency, or 10 projects, if not specified.
Complete one section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER
6

21. TITLE AND LOCATION (CITY AND STATE) Rehabilitation of Ada Dam (Bluefield, WV)	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES 1984	CONSTRUCTION (IF APPLICABLE)

23. PROJECT OWNER'S INFORMATION

PROJECT OWNER West Virginia American Water Company	POINT OF CONTACT NAME Brian Long	POINT OF CONTACT TELEPHONE NUMBER (304) 926- 0499
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24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and cost)

Ada Dam, which impounds a water supply reservoir for the City of Bluefield, West Virginia, was cited as one of twenty-six unsafe dams after a Phase I inspection by the West Virginia Department of Natural Resources. Phase II studies and a \$2 million rehabilitation program brought the dam into compliance with state and federal safety requirements. O'Brien & Gere designed the rehabilitation measures and provided resident engineering services during construction of the necessary improvements.

O'Brien & Gere undertook subsurface investigations, design and resident engineering services for remediation of dam safety deficiencies at the 65-ft high dam.

A hydraulic earth fill dam built in the 1920s, Ada Dam had been plagued with four major problems:

- Inadequate spillway
- Lack of upstream control on the reservoir blowoff line
- Heavy vegetation growth on the downstream slope
- Persistent seepage despite an extensive bedrock grouting program in 1946.

The spillway design flood exceeded the existing spillway capacity. To eliminate this inadequacy, O'Brien & Gere designed a new, ogee-shaped overflow section, side-channel spillway, spillway chute and stilling basin. The computer programs HEC 1 and HEC 2 were used to size the overflow and spillway chute sections. The stilling basin geometry and sizing were selected using criteria established by the U.S. Bureau of Reclamation.

A 60-ft high reinforced concrete intake tower, providing upstream control for the water supply conduit, was designed with two gates; one for full drawdown and one for improved water quality.

Rock excavated for spillway expansion was placed as a rockfill berm on the downstream embankment slope to improve stability to current safety standards.

RESERVOIR PIPING

During construction of the dam improvements, the reservoir blow-off pipe was televised. The televising revealed numerous joint offsets and structural pipe failures that may have been significant contributors to embankment seepage and possible piping. The pipeline was sliplined with polyethylene pipe and the resulting annulus grouted to guard against fine grained soil migration.

Engineering fees are estimated at \$120,000.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

a.	(1) FIRM NAME O'Brien & Gere	(2) FIRM LOCATION (city and state) E. Norriton PA	(3) ROLE Engineering Services
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F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAMS QUALIFICATIONS FOR THIS CONTRACT
 (Present as many projects as requested by the agency, or 10 projects, if not specified.
 Complete one section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER
7

21. TITLE AND LOCATION (CITY AND STATE)

Dam Improvements Program (Kent & Sussex Counties, DE)

22. YEAR COMPLETED

PROFESSIONAL SERVICES

Ongoing

CONSTRUCTION (IF APPLICABLE)

Ongoing

23. PROJECT OWNER'S INFORMATION

PROJECT OWNER

State of Delaware, Dept. of Natural Resources and Environmental Control (DNREC)

POINT OF CONTACT NAME

David Twing, PE

POINT OF CONTACT TELEPHONE NUMBER

(302) 834-5557

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

Site investigations, field surveys, topographic/ hydrographic surveys, subsurface investigations, preliminary and final designs, and construction administration for 8 state-owned dams. These projects involve installation of operable gates at existing or new outlet structures, repair/replacement of concrete structures/spillways, and shoreline protection, including subsurface investigations and hydrologic/hydraulic analyses. Operable gates will provide lake/pond level control for aquatic/recreational purposes and/or low level outlets for the dams. The following 8 dams are included in this program:



- **Chipmans Pond Dam-** Replace stop log structures; install 2 slide gates and 2 weir gates with manual operators on existing concrete outlet structure
- **Concord Pond Dam-** Install 2 slide gates and 2 weir gates with manual operators in sheet pile stop log bays. One slide gate and 1 weir gate will be installed in each set of stop logs bays, both north and south sides. Remaining 4 stop log bays (2north, 2south) will have bulkhead gates or fixed weir plates.
- **Craigs Pond Dam-** Replacement of existing outlet structure, with a new outlet structure on piles. Install 1 slide gate and 1 weir gate with manual operators. Repair of deteriorated concrete slope adjacent to spillway
- **Garrisons Lake Dam-** Emergency engineering support for outlet structure pipe failure resulting in a sinkhole and temporary corrective measures. Alternatives evaluation for spillway and/or outlet structure repair/ replacement. Hydrologic & Hydraulic Analysis to develop the Spillway Design Flood (SDF). The appropriate SDF was estimated through an Incremental Hazard Evaluation (IHE). The analysis was used to evaluate alternatives for passing the SDF, including lengthening the spillway or armoring the dam. Basis of Design Report and Conceptual Cost Estimates before proceeding to design
- **Hudson Pond Dam-** Replacement of existing spillway and low level outlet structures with new structure with operable gates to provide pool level control and low level outlet. Hydrologic & Hydraulic Analysis to develop the Spillway Design Flood (SDF). The appropriate SDF was estimated through an Incremental Hazard Evaluation (IHE).
- **Mudmill Pond Dam-** Install 2 slide gates and 2 weir gates with manual operators in four existing concrete bays. One slide gate and 1 weir gate will be installed in each set of stop log bays, both east and west sides.
- **Silver Lake Dam-** Replacement of existing outlet structure with a new outlet structure on piles. Install 1 slide gate and 1 weir gate with electric operators.
- **Trap Pond Dam-** Phase I - Outlet Structure Gate Investigation – Sheet pile isolation/dewatering of outlet structure to investigate gate while maintaining recreational pool in state park pond; preparation of condition assessment report with recommendations. Phase 2 – Repair/replacement of outlet structure gate and stabilization of existing outlet structure.

Estimated engineering fees are about \$680,000, estimated construction costs = \$4 million

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION (city and state)	(3) ROLE
a.	O'Brien & Gere	East Norriton, PA	Engineering Services

**F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAMS
QUALIFICATIONS FOR THIS CONTRACT**
(Present as many projects as requested by the agency, or 10 projects, if not specified.
Complete one section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER
8

21. TITLE AND LOCATION (CITY AND STATE)
**DASNY State-Wide Dam Safety Program (Multiple Locations in
Central and Adirondack Regions of New York State)**

22. YEAR COMPLETED	
PROFESSIONAL SERVICES Ongoing	CONSTRUCTION (IF APPLICABLE) Papish Pond: 2014; Oneida Dam: 2015; Lows Lake: 2016

23. PROJECT OWNER'S INFORMATION

PROJECT OWNER	POINT OF CONTACT NAME	POINT OF CONTACT TELEPHONE NUMBER
Dormitory Authority of the State of New York (DASNY)	Karl Lanckenau, PE (DASNY) Alon Dominitz, PE (NYSDEC)	(518) 257-3724 (518) 402-8185

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

O'Brien & Gere performed engineering inspections/ assessments and developed documents for compliance with NYSDEC dam safety regulations for five dams owned and operated by the State of New York, through a contract with the Dormitory Authority of the State of New York. The following dams were included in the project:

- Bog River Dam (NYS ID #132-060)
- Lows Lake Dam (NYS ID #153-060)
- Oneida Hatchery Dam (NYS ID #091-0294)
- Papish Pond Dam (NYS ID #095-5745)
- Onondaga Dam (NYS ID #083-4366)

The following services were included in the scope of work:


- Developing the Spillway Design Flood (SDF)
 - » Delineating the contributing watersheds, estimating watershed parameters
 - » HEC-HMS used to route inflow hydrographs and evaluate dam
- Performing Dam Breach Analyses
 - » Dam breach analyses performed using HEC-RAS
 - » Downstream channel geometry developed from available LiDAR data, field verification and site surveys
- Performing Incremental Hazard Evaluations
 - » The hazard classification for three of the five dams was reduced as a result of the analyses
- Developing Inundation Maps
 - » The inundation limits for the Onondaga Dam extend approximately 10.5 miles downstream from the dam through the Onondaga Nation, the Town of Nedrow and the City of Syracuse.
- Performing Dam Safety Inspections and conducting Engineering Assessments
 - » Prepared summary reports with evaluation of alternatives for proposed improvements and preliminary construction cost estimates
- Developing Emergency Action Plans and Inspection & Maintenance Plans



The project also includes permitting, design, and construction administration services under a separate phase of work. Engineering Fees for the investigation phase were about \$600,000 and estimated construction costs are approximately \$9.5 million.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

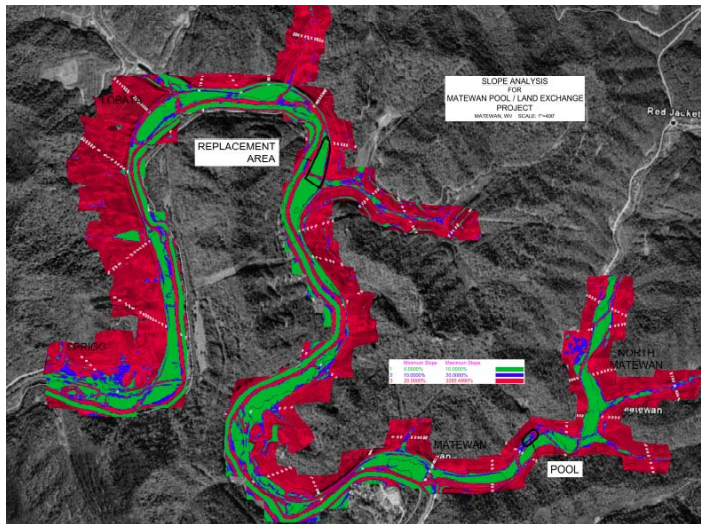
a.	(1) FIRM NAME	(2) FIRM LOCATION (city and state)	(3) ROLE
	O'Brien & Gere	East Norriton, PA	Engineering Services

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT <i>(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)</i>			20. Example Project Key Number
			9
21. Title and Location (City and State)		22. Year Completed	
The Summit Bechtel Family National Scouting Reserve - National Boy Scout Camp (Mt. Hope, WV)		Professional Services 2008-2013	Construction (if applicable) 2013
23. Project Owner's Information			
a. Project Owner		b. Point of Contact Name	c. Point of Contact Telephone Number
Trinity Works		Rob Ridgeway	(304) 469-1089
24. Brief Description of Project and Relevance to This Contract (include scope, size, and cost)			
<p>TERRADON Corporation was heavily involved in the development of the Summit Bechtel National Scout Reserve as a consultant to Trinity Works. The Summit is a 10,600+ acre outdoor adventure center owned by the Boy Scouts of America and located near Mt. Hope, WV. From the initial site selection to surveying, planning, infrastructure design and inspection, TERRADON was a key player in creating one of the highest-profile design and construction endeavors in West Virginia. Working under tight specifications and time restrictions. TERRADON was responsible for agency coordination for all permitting activities for the project, acting as the primary contact with the WVDEP on behalf of all contractors and consultants working on the 10,600+-acre site. This coordination effort dealt with more than 50 permits for various developments within the project, TERRADON also spearheaded the delivery of quality results. The project scope included:</p> <ul style="list-style-type: none"> • Initial Site Selection/Conceptual Designs • Erosion and Sediment Control • Survey/Mapping • Geotechnical Engineering • Materials Testing and Construction Monitoring • 550,000 tons of aggregate produced by on-site rock crushing • 600 acres of clearing, grubbing and rough grade operations • 28 miles of drainage swales, including erosion and sediment control • Construction Inspection of 4 earthen dams 		 <ul style="list-style-type: none"> • Site Planning/Grading • Abandoned Mine Lands (AML) Mitigation • All Environmental Permitting • Utility Design • 60+ miles of underground utilities • 3 million cubic yards of excavation • 14 miles of new roads (grade and drain) • 600 acres of fine grading and re-vegetation • 80,000 seat lawn amphitheater 	
Construction Cost: \$350 Million			
5. Firms from Section C Involved with This Project			
a	(1) Firm Name	(2) Firm Location (City and State)	(3) Role
	TERRADON Corporation	Nitro, WV	Engineer

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT <i>(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)</i>		20. Example Project Key Number
		10
21. Title and Location (City and State)	22. Year Completed	
Environmental Assessment – Section 6(f) Conversion Land – Matewan Municipal Swimming Pool, Matewan, WV	Professional Services 2011-2015	Construction (if applicable)
23. Project Owner's Information		
a. Project Owner	b. Point of Contact Name	c. Point of Contact Telephone Number
Mingo County Board of Education	Randy Keathley and James Farley	(304) 235-3333
24. Brief Description of Project and Relevance to This Contract (include scope, size, and cost)		

TERRADON Corporation was contracted by the Mingo County Board of Education to conduct an Environmental Assessment for a 6(f) Land Conversion. This project involved identifying and assessing three replacement property options for the transfer of the Matewan Municipal Pool property to the Mingo County Board of Education. The work was done as a Section 6(f) Conversion Land project pursuant to the requirements of the Land and Water Conservation Act (LAWCON) of 1965. Under this project three replacement parcels were assessed under six alternatives for the project. Each alternative was assessed for potential impacts to cultural resources, hazardous materials/wastes, geologic resources, noise and energy resources, surface water resources, floodplains, wetlands, threatened and endangered species, recreation, aesthetics, socio-economic conditions and environmental justice. In addition, a slope analysis was conducted on the land within the Matewan municipal area to assess the availability of buildable land in the proposed project area.

Coordination and consultation for this project was conducted with the following entities: Town of Matewan, Mingo County Board of Education, WV SHPO, WV DNR, WV Geological and Economic Survey, US FWS, USDA – Soil Conservation Service, US Department of Homeland Security -- FEMA and US Department of Commerce -- Census Bureau.



5. Firms from Section C Involved with This Project			
a	(1) Firm Name	(2) Firm Location (City and State)	(3) Role
	TERRADON Corporation	Nitro, WV	Environmental Consultant

G. KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS

26. NAMES OF KEY PERSONNEL (from SECTION E, BLOCK 12)	27. ROLES IN THIS CONTRACT (from SECTION E, BLOCK 13)	28. EXAMPLE PROJECTS LISTED IN SECTION F (Fill in "EXAMPLE PROJECTS KEY" section below before completing table. Place "X" under project key number for participation in same or similar role.)									
		1	2	3	4	5	6	7	8	9	10
Robert Bowers, PE	Project Officer	X	X	X	X	X	X	X	X		
Gary Emmanuel, PE	Project Manager	X		X	X	X		X	X		
Steven Snider, PE	Technical Director	X	X	X		X	X		X		
Dan Coleman, PE	Client Liaison			X			X				
V. Lyle Trumbull, PhD	Environmental Planning				X			X			
Samuel Wilkes, PWS	Wetlands									X	X
Bill Hunt, PG, LRS	NEPA									X	X
N. Johan Anestad, PE	Hydrology & Hydraulics	X		X	X			X	X		
Vinoth Muthia, EIT	Hydrology & Hydraulics	X	X	X				X	X		
Dreher Whetstone, PE	Geotech		X		X	X		X	X		
John James, PE	Geotech									X	X
Dana Pizarro, PE	Gates & Mechanical						X	X			
Edward Drummond	Structural				X	X		X	X		
Mark DiLullo, PE	Structural				X	X		X	X		
James Quinn	CM/Cost Estimating	X				X		X	X		
Mike Ward	Construction Inspector									X	X

29. EXAMPLE PROJECTS KEY

NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)	NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)
1	Broome County Dam Safety Program	6	WV American Water Co. Rehabilitation of Ada Dam
2	Broome County Dam Investigations	7	DNREC Dam Improvements Program
3	Stafford County, VA Dams	8	DASNY State-Wide Dam Safety Program
4	USACE Upgrade and Repair of Picatinny Lake and Lake Denmark Dams	9	The Summit Bechtel Family National Scouting Reserve - National Boy Scout Camp
5	TN Valley Authority Stress and Stability Assessment of Normandy Dam	10	Mingo County Board of Education Environmental Assessment – Section 6(f) Conversion Land – Matewan Municipal Swimming Pool

30. PROVIDE ANY ADDITIONAL INFORMATION REQUESTED BY THE AGENCY. ATTACH ADDITIONAL SHEETS AS NEEDED.

PROJECT APPROACH

INTRODUCTION

The WVCA is seeking a professional engineering firm to provide engineering and technical services for planning and construction oversight for the rehabilitation of several flood control structures in West Virginia. The request for an Expression of Interest (EOI) lists four high hazard flood control structures to be evaluated under this contract:

- Brush Creek Site 9
- Brush Creek Site 15
- Potomac-New Creek-Whites Run Site 17
- Potomac-New Creek Site 1

In addition, the EOI indicates that construction inspection services will be required for Upper Decker's Creek Site 1.

The EOI provides a list of project goals and objectives for these facilities which entail development of hydrologic & hydraulic data, rehabilitation alternatives & costs, environmental impacts, and planning level data according to the NRCS National Watershed Program Manual (NWPM), Part 505.

PROJECT APPROACH

O'Brien & Gere's approach to this project is to develop the necessary planning documentation to move forward with the listed projects as outlined in NWPM Part 505.35 Development of Rehabilitation Project Plans and the EOI schedule in close cooperation with the WVCA and NRCS. The approach presented below is based upon visits to all of the project sites; review of the EOI, EOI Addendum 1, the NRCS Rehabilitation Assessment Reports, and pertinent NRCS publications; and past experience with dam safety analyses, dam remediation programs and NRCS flood control projects.

We note that much of the data and engineering analyses listed as Goals/Objectives contemplated by the EOI have been either fully, or partially, addressed in the NRCS Rehabilitation Assessment Reports including completion of the Engineering Risk Assessments in NWPM Subpart E, Section 505.31. These reports offer recommendations for further study, and concepts and construction cost estimates for dam rehabilitation associated primarily with insufficient spillway capacity. However, these reports do not contain comprehensive evaluations of all potential project deficiencies and do not account for the environmental impacts of remedial alternatives, environmental mitigation, procurement of property easements, real property acquisition, construction oversight and administration, and other factors affecting alternative selection.

Advancement of these projects is therefore expected to consist of implementing the recommendations included in the Rehabilitation Assessment Reports; refining the Engineering Risk Assessments; evaluating environmental impacts; developing construction and project cost estimates; and considering rehabilitation alternatives in sufficient detail to make a recommendation for remediation.

In general, the services are expected to consist of the following:

Task 1 – Engineering (Goal/Objective 4.1)

- Review archival information such as the NRCS Design Notebooks, as-built drawings, operation and maintenance manuals, inspection reports and the Rehabilitation Assessment Reports.
- Conduct a visual dam safety inspection of each of the sites to document the existing condition of the dams, principal and emergency spillways, and appurtenances.
- Reviewing the SDF calculations and dam breach routing contained in the Rehabilitation Assessment Reports and refining if deemed necessary or advantageous.
- The results of the updated hydrologic/hydraulic analyses contained within the Rehabilitation Assessment Reports demonstrate that some of the sites have insufficient spillway capacity to pass the Spillway Design Flood without dam overtopping. Therefore, we propose that an Incremental Hazard Evaluation (IHE) be performed to consider a reduced SDF which could, in turn, reduce the scope and cost of project upgrading. An IHE is conducted by estimating the peak downstream water surface elevations and associated hazard for breach and non-breach conditions during

various flood events. The SDF is identified as the largest event (often highest percentage of the PMF) where there is a significant increase in hazard between the breach and non-breach conditions. The increase in hazard can result from encroachment of flood waters on structures that were previously above the flood water surface elevation (WSE) or did not exist at the time of construction; downstream dams being overtopped that could pass the non-breach flood; or any other inundation that is deemed to significantly increase the likelihood of loss of life. The US Bureau of Reclamation’s ACER 11 document will be used to assess impacts of flood depths and velocities in the downstream hazard area.

- Evaluate the possibility of conducting Site Specific PMP studies which could reduce the inflow design floods by up to 20%. These studies can also be performed on a statewide basis, as already done in the neighboring states Ohio and Virginia.
- Refine the SITES erodibility assessment of the earth-lined emergency spillways, which will require geotechnical investigations to procure samples of, and conduct lab testing on, soils lining the spillway(s).
- Execute geotechnical investigations to assign mechanical properties to the embankment zones and foundation. The investigations would also encompass procurement of data thought necessary for evaluation and design of rehabilitation alternatives, such as from the abutment slopes and outlet channels of the emergency spillways. The investigations will include borings, test pits, in-situ testing, sample procurement, piezometer installations, and laboratory classification and strength testing.
- Assess embankment stability with the higher flood pool elevation calculated with current hydrology using geotechnical data presented in each project’s NRCS Design Notebook, the dams’ as-built geometry, the results of the proposed geotechnical investigations, and the GeoSlope Slope-W stability analysis software. The piezometric data obtained from the geotechnical investigations will be combined with the permeability test results and GeoSlope’s seepage analysis software to calculate the steady-state SDF saturation (phreatic surface) within the embankments.
- Assess the gradation of existing filter soil zones against current design criteria.
- Conduct televised ROV inspections of the principal spillway conduits.
- Evaluate the downstream principal spillway channel capacity and necessity for a conduit energy dissipater at Potomac-New Creek Site 1.
- Undertake as-built surveys.
- Estimate reservoir sedimentation rates and sediment storage life
- Conduct a potential failure mode analysis

Task 2 – Biologic Studies (Goal/Objective 4.2)

O’Brien & Gere, in conjunction with TERRADON, proposes the following methodology to assess and analyze the biological impacts of proposed alternatives to the watersheds and streams.

Our team will request Pre-Total Maximum Daily Load (TMDL) chemical and biological monitoring data from WVDEP’s Watershed Assessment Branch. WVDEP routinely collects 12 monthly chemistry samples and one biological (macro invertebrates) sample from streams to determine 303(d) impaired streams in compliance with the Clean Water Act and TMDL development efforts being undertaken throughout the state. This data will be used to establish baseline conditions and data sets for the Brush Creek and New Creek watersheds and streams to perform spatial and temporal analyses to provide impact analysis for the proposed alternatives. This methodology will also weave seamlessly into the stakeholder process, because the Clean Water Act process has already engaged stakeholders during the impairment listing and TMDL development processes. Local watershed citizen groups can also be a valuable resource for data and knowledge throughout this process.

Creek	WV Stream Code	Watershed	HUC#	303(d) Impairments	TMDL Year
Brush Creek	WVKNB-12	Upper New River	05050002	Biological, Fecal Coliform, Iron	2008
New Creek	WVPNB-7	North Branch Potomac	02070002	Biological, Fecal Coliform	2011
Deckers Creek	WVM-8	Monongahela	05020003	Biological (surrogate) DO, Fecal Coliform, Iron	2014

Task 3 – Rehabilitation Alternatives (Goal/Objective 4.3 & 4.9)

O'Brien & Gere will evaluate several conceptual, technically viable remediation alternatives such as those presented in the NRCS Rehabilitation Assessment Reports, and prepare planning level cost estimates for the alternatives in sufficient detail to make rehabilitation recommendations. For example, where a project has insufficient emergency spillway capacity, we will study options such as expanding the existing spillway, adding a second spillway and/or raising the embankment. Assessment of hydraulic capacity of the alternatives will be based on HEC-RAS and/or the SITES computer software. These concepts would be evaluated with consideration of several factors that could constrain the scope of acceptable alternatives, such as the following:

- Available real estate
- Development immediately downstream of the dams and/or spillways
- Limiting channel and exit velocities
- Site geology
- Flood pool embankment stability
- Flood pool expansion and encroachment
- Environmental and wetlands impacts
- Construction site access and staging
- Constructability
- Ease of future operations & maintenance
- O'Brien & Gere remediation experience

Should the refined SITES erodibility analyses demonstrate unacceptable emergency spillway erosion potential, we will consider mitigating alternatives including concrete walls to contain head-cutting or channel lining with roller compacted concrete, asphalt, riprap or articulated concrete blocks (ACB).

Once a few viable alternatives have been identified, conceptual remediation layouts would be developed on existing or new topographic mapping from which quantities for the major project features of the remediation work will be estimated. Costs for each work element will be developed by assigning material properties, installation costs, administrative costs, overhead and profit. Select unit prices will be acquired from the cost estimating software CostWorks and from recent bid tabulations for similar work. Factors for other project costs such as land acquisition or easements, construction contingency, preliminary and final design, permitting, construction administration and inspection will be added to the construction cost to produce a total installation cost estimate for the project. This estimate would be prepared according to a spreadsheet available from the national program manager for the Watershed Rehabilitation Program. Narratives will be prepared for each dam site describing the rehabilitation alternatives considered, their merits and disadvantages, and any mitigating factors influencing alternative selection.

Task 4 – Environmental Services (Goal/Objectives 4.4, 4.8, 4.10 & 4.11)

The project team will assess and delineate wetlands and streams at the project sites following the specifications of the US Army Corps of Engineers 1987 Wetland Delineation Manual and Regional Supplement: Eastern Mountains and Piedmont Region. Field work will include completing USACE Data Forms for wetland sampling points and the WV Stream and Wetland Valuation Metric. In addition, the field activities will be photo-documented and delineated wetlands and stream features will be captured using a hand-held sub meter GPS. Desktop research including a review of National Wetland Inventory Mapping, soils and floodplain mapping, and historical aerial photographs, will be conducted for inclusion in the wetland delineation reports. Upon completion of collection of field data and desktop research, wetland delineation reports and Jurisdictional Determination Request documents will be prepared for submittal. In the event that the sizes of wetlands delineated exceed mitigation thresholds, TERRADON will prepare mitigation plans for the affected wetlands and/or streams.

The project team will prepare NEPA documentation assessing the mitigation alternatives for each project site for potential impact to:

- national economic development
- air quality
- cultural resources

- ecologically critical areas
- endangered and threatened species
- environmental justice and civil rights
- essential fish habitat
- fish and wildlife
- floodplain management
- forest resources
- invasive species
- land use
- migratory birds
- natural areas
- parkland
- prime and unique farmland and farmland of statewide significance
- public health and safety
- regional water resource plans
- riparian areas
- scenic beauty
- scientific resources
- sole source aquifers
- social issues
- soil resources
- water quality
- water resources
- waters of the United States
- wetlands
- wild and scenic rivers
- other concerns identified by agencies or through public comment

This work will be conducted in accordance with NRCS Title 390, National Watershed Program Manual (NWPM), Part 505 and the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4321 et seq. The initial draft documents will be prepared for agency review. Following agency comment, the draft NEPA documents will be revised and submitted for agency approval. Our anticipated schedule for Draft and Final NEPA documents is as follows:

Site Name	Draft NEPA Document Date	Final NEPA Document Date
Brush Creek Site 15	6/31/16	11/31/16
Brush Creek Site 9	10/31/16	3/31/17
Potomac-New Creek Site 17	12/1/16	4/31/17
Potomac-New Creek Site 1	1/1/17	5/31/17

Task 5 – Project Reports (Goal/Objective 4.5)

A project report will be prepared for each dam discussing all of the evaluation elements described previously and offering a preliminary recommendation for project rehabilitation. The report will be appended with supporting documentation including:

- inspection checklists
- an inspection photographic log
- record drawings

- conceptual plan layout and section sketches for alternatives
- analytical software input and output printouts
- calculations
- data sheets
- watershed soil maps & subdivisions
- construction quantity estimates and cost estimates
- topographic mapping
- downstream demographics
- stream channel survey cross-sections
- the Evaluation of Potential Rehabilitation Projects worksheet
- wetlands delineations
- water quality data

Task 6 – Coordination and Communication (Goal/Objectives 4.6 & 4.7)

The project manager will track schedule and budget in accordance with O’Brien & Gere’s Project Delivery Manual and will provide the WVCA with periodic updates regarding the status and results of individual project work elements. We propose monthly teleconferences and preparation of meeting minutes to coordinate the work and maintain communication amongst project participants. We will identify and coordinate with stakeholders at each dam site regarding the likely rehabilitation alternative and obtain feedback thereon. We will attend, and prepare exhibits for scoping, public, sponsor and agency coordination meetings as necessary.

Task 7 – Construction Services (Goal/Objectives 5.1 thru 5.11)

The O’Brien & Gere team will provide a certified construction inspector with dam construction experience for the Upper Decker’s Creek Site 1 rehabilitation. The inspector will:

- review contractor survey data
- perform oversight of construction activities and QC testing
- monitor site safety and E&SC measures
- perform QAP tasks
- prepare daily reports
- assist in the review and processing of progress payments

The resident inspector may be supported by a construction manager and O’Brien & Gere staff engineers who will review shop drawings, RFI’s and construction schedules, issue clarifications and develop cost estimates for proposed modifications/change orders, prepare Record Drawings, and coordinate with the design engineer, if requested by WVCA.

ADDITIONAL QUALIFICATIONS AND EXPERIENCE

O’BRIEN & GERE

O’Brien & Gere has been continuously providing dam engineering services to its clients since the early 1970’s. These services have included safety inspections dating to the USACE Phase I Inspection Program; hydrologic, hydraulic, structural, and geotechnical investigations; and design and construction management services for new dams and for rehabilitation of existing dams and levees. Our breadth of experience includes dam engineering services for numerous water and power utilities, municipalities, states and the Federal government.

O’Brien & Gere has a dedicated Dams and Water Resources Division that addresses dam and levee safety issues on a routine basis. Since most dam investigation/ design/construction projects are evolutionary in nature due to generally unknown subsurface conditions, our dam engineering staff is accustomed to adapting our project approaches to meet the needs of a specific dam or levee and its site conditions. In addition, our dam engineering staff is supported by approximately 900 employees in 28 regional offices, including local offices in Newark, DE and East Norriton, PA. This pool of resources allows us to draw from a wide variety of engineering backgrounds and experience, including environmental permitting and ecological sciences, which provides the flexibility to address most technical issues that

would arise on a dam or levee safety project.

O'Brien & Gere provides a suite of technical services that includes investigation, design, permitting, construction, fabrication, and operation & maintenance (O&M) of engineered solutions. This life cycle capability allows O'Brien & Gere to leverage our staff and skills in construction and O&M into our engineering studies and designs to ensure that we prepare constructible, operable, and maintainable technical solutions for our clients. Additionally, O'Brien & Gere is a Sustaining Member of the Association of State Dam Safety Officials (ASDSO) and the United States Society on Dams (USSD).

O'Brien & Gere has inspected several hundred dams over the past 30 years and has prepared numerous O&M Manuals and EAPs for dam owners throughout the United States. O'Brien & Gere has also conducted exploratory programs, performed detailed investigations, developed remedial designs, and managed the construction of rehabilitation programs for more than 100 dams in that time span.

TERRADON CORPORATION

TERRADON Corporation offers a multi-faceted approach to design engineering and consulting services. For more than 25 years TERRADON staff has provided a wealth of engineering solutions blanketing the Ohio Valley and the Appalachian Region with successful projects. The company built its reputation on expert personnel and quality, time-sensitive service. Those same founding principles hold true today. Staff includes engineers, landscape architects, surveyors, planners, environmental scientists, designers, technicians and LEED Accredited Professionals. The company maintains approximately 50 leading-edge staff in four locations: Nitro/Poca, WV; Lewisburg, WV; Charlton Heights, WV; and Columbus, OH. TERRADON'S departments work cohesively to provide turn-key solutions that strive to exceed client expectations.

The family-owned business has built a strong reputation by providing flexible, cost effective design solutions and maintaining the highest level of customer service. TERRADON is particularly suited to design engineering within the mountainous areas of the Ohio Valley and Appalachian Regions. The firm has been recognized through numerous awards from professional organizations and agencies including the several State Divisions of Highways, Departments of Environmental Protection and the American Institute of Architects state chapters.

TERRADON is the largest woman-owned engineering firm in West Virginia. TERRADON is a certified Women's Business Enterprise as defined by the Women's Business Enterprise National Council and the National Women Business Owners Corporation.

TERRADON offers a high-level of understanding and knowledge of geotechnical remediation projects. The majority of its Civil, Geotechnical and Environmental staff has decades of experience in the water industry. The group is well-seasoned in working successfully with West Virginia public agencies such as the Department of Environmental Protection and the Bureau for Public Health. Constantly changing federal and state environmental requirements are difficult to track and can have a serious impact on businesses and other organizations. TERRADON offers a strong environmental services team to manage issues in a complex environment. Staff is well-versed on environmental permitting processes and regulations as well as site assessment and reporting.

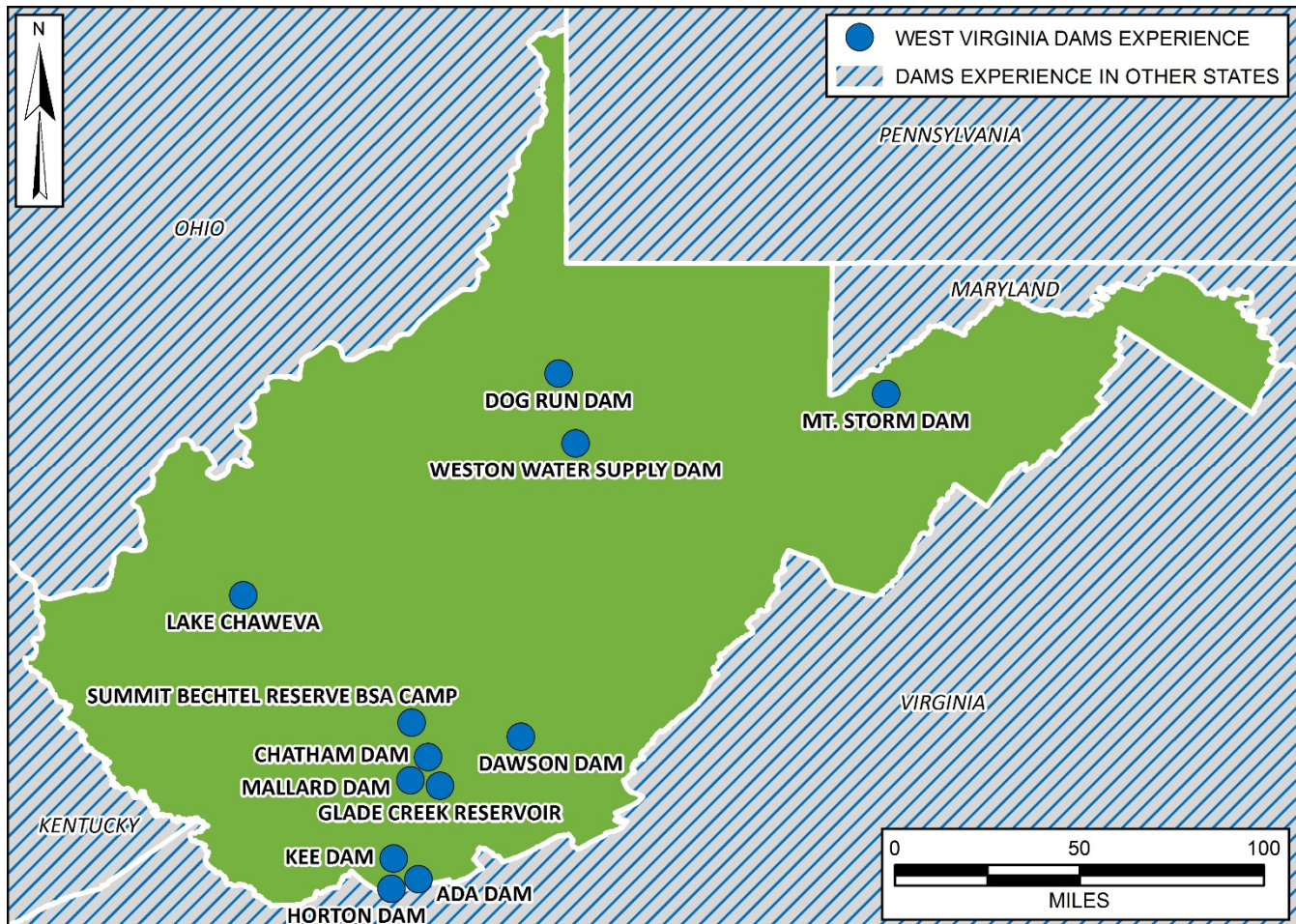
SUBSURFACE, INC.

Subsurface, Inc. will provide drilling services on this project. Subsurface has operated out of Gauley Bridge, WV since 1995 and provides drilling services to a broad geographical area that includes: West Virginia, Ohio, Pennsylvania, New York, Kentucky, Tennessee, North Carolina, Indiana and Virginia. Drilling services include standard hollow-stem augering as well as direct push services.

Subsurface's drillers are WV Certified Well Drillers who are OSHA HAZWOPER trained. Equipment owned and operated by Subsurface includes: an AMS Power Probe 9500VTR track rig stationed in Gauley Bridge, West Virginia, and a 9500VTR track rig stationed in Morgantown, West Virginia. Their Power Probe 9500VTR includes an upgraded 201 foot-pound (S-21) hammer. It is capable of driving a 3½-inch casing to allow the installation of pre-packed monitoring wells. The Power Probe also has the capability to turn 4¼-inch hollow stem augers to depths of more than 75 feet. In addition, it performs traditional DPT operations, such as continuous soil cores and screen point water sampling

WEST VIRGINIA DAMS EXPERIENCE

The O'Brien & Gere/TERRADON Team has significant West Virginia dam experience. The map below includes the various locations in which our team has successfully completed dams projects within the state. In addition to West Virginia, the team has extensive experience in all of the neighboring states as well – a list of those projects can be provided upon request.



AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

31. SIGNATURE

Robert R. Bowers

32. DATE

June 4, 2015

33. NAME AND TITLE

Robert Bowers, PE – Vice President

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (if any)

AGR150000004

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or branch office) NAME O'Brien & Gere			3. YEAR ESTABLISHED 1983	4. DUNS NUMBER 10-142-9553
2b. STREET Brentwood Campus, 301 East Germantown Pike, 3 rd Floor			5. OWNERSHIP a. TYPE Corporation – Large Business	
2c. CITY East Norriton	2d. STATE PA	2e. ZIP CODE 19401	b. Small Business Status	
6a. POINT OF CONTACT NAME AND TITLE Thomas A. Nowlan, PE, Senior Vice President			7. NAME OF FIRM (if block 2a is a branch office) O'Brien & Gere	
6b. TELEPHONE NUMBER 484-804-7200		6c. E-MAIL ADDRESS Thomas.Nowlan@obg.com		
8a. FORMER FIRM NAME(S) (if any)			8b. YR. ESTABLISHED	8c. DUNS NUMBER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) Firm	(2) Branch			
02	Administrative	109	9	A01	Acoustics, Noise Abatement	1
06	Architect, Architectural Designer	4	0	A04	Air Pollution Control	2
08	CADD Technician	23	4	A12	Automation; Controls; Instrumentation	1
10	Chemical Engineer, Designer	17	4	C15	Construction Management	1
12	Civil Engineer, Designer	81	6	D02	Dams (Earth, Rock)	6
15	Construction Inspector	22	1	D09	Dredging Studies and Design	2
16	Construction Manager	39	3	E01	Ecological Investigations	2
18	Cost Estimator	15	3	E03	Electrical Studies and Design	1
21	Electrical Engineer, Designer	34	0	E09	Environmental Impact Studies	6
23	Environmental Engineer, Designer	63	6	E13	Environmental Testing and Analysis	3
24	Environmental Scientist	38	5	H02	Hazardous Materials Handling, Storage	4
27	Foundation/Geotechnical	8	3	H03	Hazardous, Toxic, Rad Waste	7
30	Geologist	39	8	H05	Health Systems Planning	3
36	Industrial Hygienist/H&S	9	1	I01	Industrial Bldgs, Mftg. Plants	7
42	Mechanical Engineer, Designer	37	1	I03	Industrial Waste Treatment	6
48	Project Manager	33	4	P05	Planning (Community, Reg.)	3
57	Structural Engineer, Designer	11	2	P06	Planning (site, Installation)	5
58	Technician	87	10	S04	Sewage Collection, Treatment	5
	Air Quality Specialist	14	1	W02	Water Resources	1
	O&M Staff	43	10	W03	Water Treatment, Distribution	5
	Other Disciplines*	127	1			
TOTAL		851	82			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (insert revenue index number shown at right)		PROFESSIONAL SERVICES REVENUE INDEX NUMBER			
a. FEDERAL WORK	5	1. Less than \$100,000	6. \$2 million to less than \$5 million	7. \$5 million to less than \$10 million	8. \$10 million to less than \$25 million
b. NON-FEDERAL WORK	8	2. \$100,000 to less than \$250,000	9. \$25 million to less than \$50 million	3. \$250,000 to less than \$500,000	10. \$50 million or greater
c. TOTAL WORK	8	4. \$500,000 to less than \$1 million	5. \$1 million to less than \$2 million		

12. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

a. SIGNATURE 	b. DATE June 4, 2015
c. NAME AND TITLE Thomas A. Nowlan, PE, Senior Vice President	

*Other Disciplines include Commissioning Staff, Controls Engineers, Fire Protection Engineer, GIS Specialists, Laborers, and Manufacturing Staff.

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (if any)
 AGR1500000004

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or branch office) NAME O'Brien & Gere			3. YEAR ESTABLISHED 1999	4. DUNS NUMBER 01-879-3310
2b. STREET 22 Saw Mill River Road, 1 st Floor			5. OWNERSHIP a. TYPE Corporation – Large Business	
2c. CITY Hawthorne	2d. STATE NY	2e. ZIP CODE 10532	b. Small Business Status	
6a. POINT OF CONTACT NAME AND TITLE Lowell Kachalsky, PE, Vice President			7. NAME OF FIRM (if block 2a is a branch office) O'Brien & Gere	
6b. TELEPHONE NUMBER 914-345-1616		6c. E-MAIL ADDRESS Lowell.Kachalsky@obg.com		
8a. FORMER FIRM NAME(S) (if any)			8b. YR. ESTABLISHED	8c. DUNS NUMBER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) Firm	(2) Branch			
02	Administrative	109	1	D08	Dredging Studies and Design	2
06	Architect, Architectural Designer	4		E09	Environ.. Impact Studies	1
08	CADD Technician	23		I03	Industrial Waste Treatment	1
10	Chemical Eng., Designer	17		S04	Sewage Collection	6
12	Civil Eng., Designer	81	3	S13	Storm Water Handling Facilities	6
15	Construction Inspector	22		V01	Value Analysis	1
16	Construction Manager	39	2	W03	Water Treatment, Distribution	6
18	Cost Estimator	15				
21	Electrical Eng. Designer	34	1			
23	Environ. Eng., Designer	63				
24	Environ. Scientist	38				
30	Geologist	39	1			
27	Foundation/Geotechnical	8	1			
36	Industrial Hygienist/H&S	9				
42	Mechanical Eng., Designer	37	1			
48	Project Manager	33				
57	Structural Eng., Designer	11				
58	Technician	87	1			
	Air Quality Specialist	14				
	O&M Staff	43				
	Other Employees*	127				
TOTAL		851	11			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (insert revenue index number shown at right)		PROFESSIONAL SERVICES REVENUE INDEX NUMBER			
		1. Less than \$100,000	2. \$100,000 to less than \$250,000	3. \$250,000 to less than \$500,000	4. \$500,000 to less than \$1 million
a. FEDERAL WORK	2	5. \$1 million to less than \$2 million	6. \$2 million to less than \$5 million	7. \$5 million to less than \$10 million	8. \$10 million to less than \$25 million
b. NON-FEDERAL WORK	7	9. \$25 million to less than \$50 million	10. \$50 million or greater		
c. TOTAL WORK	7				

12. AUTHORIZED REPRESENTATIVE.
 The foregoing is a statement of facts.

a. SIGNATURE 	b. DATE June 4, 2015
c. NAME AND TITLE Lowell Kachalsky, PE, Vice President	

*Other Employees includes Commissioning, Controls Engineers, Fire Protection Engineer, GIS Specialists, Laborers, Manufacturing Staff.



ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (if any)
 AGR150000004

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or branch office) NAME O'Brien & Gere			3. YEAR ESTABLISHED 2000	4. DUNS NUMBER 130509-3545
2b. STREET 4435 Waterfront Drive, Suite 205			5. OWNERSHIP a. TYPE Corporation – Large Business	
2c. CITY Glen Allen	2d. STATE VA	2e. ZIP CODE 23060	b. Small Business Status	
6a. POINT OF CONTACT NAME AND TITLE Robert E. Bell, Jr., PE, Vice President			7. NAME OF FIRM (if block 2a is a branch office) O'Brien & Gere	
6b. TELEPHONE NUMBER 804-270-3515		6c. E-MAIL ADDRESS Robert.Bell@obg.com		
8a. FORMER FIRM NAME(S) (if any)			8b. YR. ESTABLISHED	8c. DUNS NUMBER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (See Below)
		(1) Firm	(2) Branch			
02	Administrative	109	1	A01	Acoustics, Noise Abatement	1
06	Architect, Architectural Designer	4		E09	Environmental Impact Studies	3
08	CADD Technician	23		E13	Environmental Testing and Analysis	1
10	Chemical Engineer, Designer	17		H02	Hazardous Materials Handling, Storage	1
12	Civil Engineer, Designer	85	5	H03	Hazardous, Toxic, Rad Waste	4
15	Construction Inspector	22		I01	Industrial Buildings, Mftg. Plants	3
16	Construction Manager	39		I02	Industrial Process; Quality Control	1
18	Cost Estimator	15		P05	Planning (Community, Regional)	1
21	Electrical Engineer, Designer	34		P06	Planning (Site, Installation)	3
23	Environmental Engineer, Designer	63		S04	Sewage Collection, Treatment	5
24	Environmental Scientist	38		S13	Storm Water Handling	1
27	Foundation/Geotechnical	8		W03	Water Treatment, Distribution	2
30	Geologist	38	1			
36	Industrial Hygienist/H&S	9				
42	Mechanical Engineer, Designer	37				
48	Project Manager	33	1			
57	Structural Engineer, Designer	11				
58	Technician	87	1			
	Air Quality Specialist	14				
	O&M Staff	43				
	Other Disciplines*	127				
TOTAL		851	9			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right)		PROFESSIONAL SERVICES REVENUE INDEX NUMBER			
a. Federal Work	2	1. Less than \$100,000	6. \$2 million to less than \$5 million	7. \$5 million to less than \$10 million	8. \$10 million to less than \$25 million
b. Non-Federal Work	7	2. \$100,000 to less than \$250,000	9. \$25 million to less than \$50 million	10. \$50 million or greater	
c. Total Work	7	3. \$250,000 to less than \$500,000	4. \$500,000 to less than \$1 million	5. \$1 million to less than \$2 million	

12. AUTHORIZED REPRESENTATIVE
 The foregoing is a statement of facts.

a. SIGNATURE 	b. DATE June 4, 2015
c. NAME AND TITLE Robert Bell, Jr. PE, Vice President	

*Other Disciplines includes Commissioning Staff, Controls Engineers, Fire Protection Engineer, GIS Specialists, Laborers, and Manufacturing Staff.



ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (if any)
AGR1500000004

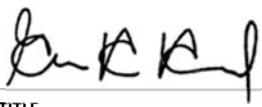
PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (or branch office) NAME O'Brien & Gere			3. YEAR ESTABLISHED 1985	4. DUNS NUMBER 13-166-4278
2b. STREET 1090 King Georges Post Road, Suite 904			5. OWNERSHIP a. TYPE Corporation – Large Business	
2c. CITY Edison	2d. STATE NJ	2e. ZIP CODE 08837	b. Small Business Status	
6a. POINT OF CONTACT NAME AND TITLE Gary A. Angyal, PE, Vice President			7. NAME OF FIRM (if block 2a is a branch office) O'Brien & Gere	
6b. TELEPHONE NUMBER 732-225-7380		6c. E-MAIL ADDRESS Gary.Angyal@obg.com		
8a. FORMER FIRM NAME(S) (if any)			8b. YR. ESTABLISHED	8c. DUNS NUMBER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) Firm	(2) Branch			
02	Administrative	109	3	A01	Acoustics, Noise Abatement	1
06	Architect, Architectural Designer	4		A04	Air Pollution Control	2
08	CADD Technician	23	1	C15	Construction Management	2
10	Chemical Engineer, Designer	17	4	D02	Dams (Earth, Rock)	2
12	Civil Engineer, Designer	81	3	D08	Dredging Studies and Design	2
15	Construction Inspector	22	2	E01	Ecological Investigations	2
16	Construction Manager	39	1	E09	Environ. Impact Studies	7
18	Cost Estimator	15		E12	Environmental Remediation	3
21	Electrical Engineer, Designer	34		E13	Environmental Testing and Analysis	3
23	Environmental Engineer, Designer	63	3	H02	Hazardous Materials, Handling, Storage	2
24	Environmental Scientist	38	3	H03	Hazardous, Toxic, Rad Waste	8
27	Foundation/Geotechnical	8		I03	Industrial Waste Treatment	3
30	Geologist	39	3	P05	Planning (Community, Regional)	3
36	Industrial Hygienist/H&S	9		P06	Planning (Site, Installation)	4
42	Mechanical Engineer, Designer	37		S04	Sewage Collection, Treatment	2
48	Project Manager	33	1	W02	Water Resources	2
57	Structural Engineer, Designer	11		W03	Water Treatment, Distribution	3
58	Technician	87	1			
	Air Quality Specialist	14				
	O&M Staff	43	4			
	Other Disciplines*	127				
TOTAL		851	29			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (insert revenue index number shown at right)		PROFESSIONAL SERVICES REVENUE INDEX NUMBER			
a. FEDERAL WORK	5	1. Less than \$100,000	6. \$2 million to less than \$5 million	7. \$5 million to less than \$10 million	8. \$10 million to less than \$25 million
b. NON-FEDERAL WORK	8	2. \$100,000 to less than \$250,000	9. \$25 million to less than \$50 million	10. \$50 million or greater	
c. TOTAL WORK	8	3. \$250,000 to less than \$500,000	4. \$500,000 to less than \$1 million	5. \$1 million to less than \$2 million	

12. AUTHORIZED REPRESENTATIVE The foregoing is a statement of facts.	
a. SIGNATURE 	b. DATE June 4, 2015
c. NAME AND TITLE Gary A. Angyal, PE, Vice President	

*Other Disciplines include Commissioning Staff, Controls Engineers, Fire Protection Engineer, GIS Specialists, Laborers, Manufacturing Staff.

ARCHITECT - ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any)

AGR150000004

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

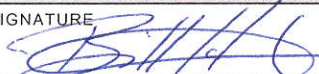
2a. FIRM (OR BRANCH OFFICE) NAME TERRADON Corporation			3. YEAR ESTABLISHED 1989	4. DUNS NUMBER 62-438-4616
2b. STREET 409 Jacobson Drive			5. OWNERSHIP	
2c. CITY Poca	2d. STATE WV	2e. ZIP CODE 25159	a. TYPE Corporation	
6a. POINT OF CONTACT NAME AND TITLE Bill Hunt, Vice President of Geo-Environmental, Program Manager			b. SMALL BUSINESS STATUS Woman Owned Small Business	
6b. TELEPHONE NUMBER 304-729-9113			6c. E-MAIL ADDRESS bill.hunt@terraddon.com	
8a. FORMER FIRM NAME(S) (If any) N/A			8b. YEAR ESTABLISHED	8c. DUNS NUMBER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	7		C14	Conservation And Resource Mgmt.	3
07	Biologist			C15	Construction Management	3
08	CAD Technician	4		D02	Dams (Earth; Rock); Dikes	1
10	Chemical Engineer			D04	Design-Build – Prep. Of RFPs	1
11	Chemist			E01	Ecological Investigations	3
12	Civil Engineer	3		E09	EISs, Assessments, Statements	1
15	Construction Inspector	5		E11	Environmental Planning	2
16	Construction Manager	2		E12	Environmental Remediation	1
19	Ecologist			E13	Environmental Testing & Analysis	1
23	Environmental Engineer			G04	GIS	1
24	Environmental Scientist	2		H03	HTRW Remediation	1
27	Foundation/Geotechnical Eng	1		I03	Industrial Waste Treatment	1
29	GIS Specialist			I06	Irrigation, Drainage	3
30	Geologist/Geotech	2		P06	Planning (Site, Install and Projects)	4
34	Hydrologist	2		S01	Safety Engineering, OSHA	1
36	Industrial Hygienist			S03	Seismic Designs & Studies	3
42	Mechanical Engineer			S05	Soils & Geologic Studies	2
51	Safety/Occupational Health	1		S07	Solid Wastes Landfill	2
57	Structural Engineer	3		S13	Storm Water Management	3
59	Toxicologist			T02	Testing & Inspection Services	3
62	Water Resource Managers			W02	Water Resources; Ground Water	2
	Other Employees	6		W03	Water Supply; Treatment and Distribution	1
Total		48				

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right)		PROFESSIONAL SERVICES REVENUE INDEX NUMBER			
a. Federal Work	2	1. Less than \$100,000	6. \$2 million to less than \$5 million	7. \$5 million to less than \$10 million	8. \$10 million to less than \$25 million
b. Non-Federal Work	7	2. \$100,000 to less than \$250,000	7. \$5 million to less than \$10 million	8. \$10 million to less than \$25 million	9. \$25 million to less than \$50 million
c. Total Work	7	3. \$250,000 to less than \$500,000	8. \$10 million to less than \$25 million	9. \$25 million to less than \$50 million	10. \$50 million or greater
		4. \$500,000 to less than \$1 million	9. \$25 million to less than \$50 million	10. \$50 million or greater	
		5. \$1 million to less than \$2 million	10. \$50 million or greater		

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE 	b. DATE May 29, 2015
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c. NAME AND TITLE Bill Hunt, Vice President, Geo-Environmental Department
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ARCHITECT - ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (If any)

AGR150000004

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME Subsurface, Inc.			3. YEAR ESTABLISHED 1995	4. DUNS NUMBER 073153947
2b. STREET P.O. Box 359			5. OWNERSHIP	
2c. CITY Gauley Bridge			a. TYPE Corporation	
2d. STATE WV	2e. ZIP CODE 25085-0359		b. SMALL BUSINESS STATUS Woman Owned Business	
6a. POINT OF CONTACT NAME AND TITLE Kari Mihal, Owner			7. NAME OF FIRM (If block 2a is a branch office)	
6b. TELEPHONE NUMBER (304) 632-1998		6c. E-MAIL ADDRESS info@subsurfaceincwv.com		
8a. FORMER FIRM NAME(S) (If any) N/A			8b. YEAR ESTABLISHED	8c. DUNS NUMBER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
02	Administrative	1		C14	Conservation And Resource Mgmt.	
07	Biologist			C15	Construction Management	
08	CAD Technician			D02	Dams (Earth; Rock); Dikes	
10	Chemical Engineer			D04	Design-Build – Prep. Of RFPs	
11	Chemist			E01	Ecological Investigations	
12	Civil Engineer			E09	EISs, Assessments, Statements	
15	Construction Inspector			E11	Environmental Planning	
16	Construction Manager			E12	Environmental Remediation	
19	Ecologist			E13	Environmental Testing & Analysis	2
23	Environmental Engineer			G04	GIS	
24	Environmental Scientist	1		H03	HTRW Remediation	
27	Foundation/Geotechnical Eng			I03	Industrial Waste Treatment	
29	GIS Specialist			I06	Irrigation, Drainage	
30	Geologist/Geotech	1		P06	Planning (Site, Install and Projects)	
34	Hydrologist			S01	Safety Engineering, OSHA	
36	Industrial Hygienist			S03	Seismic Designs & Studies	
42	Mechanical Engineer			S05	Soils & Geologic Studies	2
51	Safety/Occupational Health			S07	Solid Wastes Landfill	
57	Structural Engineer			S13	Storm Water Management	
59	Toxicologist			T02	Testing & Inspection Services	2
62	Water Resource Managers			W02	Water Resources; Ground Water	
	Other Employees			W03	Water Supply; Treatment and Distribution	
Total		3				

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right)		PROFESSIONAL SERVICES REVENUE INDEX NUMBER			
a. Federal Work	1	1. Less than \$100,000	6. \$2 million to less than \$5 million	7. \$5 million to less than \$10 million	8. \$10 million to less than \$25 million
b. Non-Federal Work	3	2. \$100,000 to less than \$250,000	3. \$250,000 to less than \$500,000	4. \$500,000 to less than \$1 million	5. \$1 million to less than \$2 million
c. Total Work	3	6. \$2 million to less than \$5 million	7. \$5 million to less than \$10 million	8. \$10 million to less than \$25 million	9. \$25 million to less than \$50 million
		10. \$50 million or greater			

12. AUTHORIZED REPRESENTATIVE The foregoing is a statement of facts.	
a. SIGNATURE Kari Mihal, Owner	b. DATE June 3, 2015
c. NAME AND TITLE Kari Mihal, Owner	

Required Forms

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: AGR1500000004

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

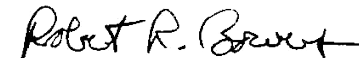
(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

O'Brien & Gere Engineers, Inc.

Company



Authorized Signature

June 4, 2015

Date

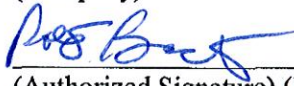
NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

Revised 6/8/2012

CERTIFICATION AND SIGNATURE PAGE

By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

O'Brien & Gere Engineers, Inc.
(Company)

 Robert Bowers- Vice President
(Authorized Signature) (Representative Name, Title)

P- (484) 804-7209; F- (215) 628-9953; May 20, 2015
(Phone Number) (Fax Number) (Date)

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: O'Brien & Gere Engineers, Inc.

Authorized Signature: *Robert R. Bane* Date: May 20, 2015

State of Pennsylvania

County of Montgomery, to-wit:

Taken, subscribed, and sworn to before me this 20 day of May, 2015

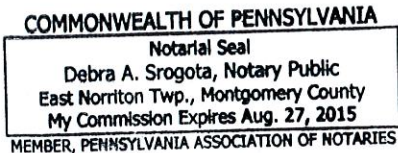
My Commission expires August 27, 2015

AFFIX SEAL HERE

NOTARY PUBLIC

Debra A. Srogota

Purchasing Affidavit (Revised 07/01/2012)



Exceptions and Clarifications

EXCEPTIONS AND CLARIFICATIONS

O'Brien & Gere would like to propose the following modifications to the General Terms & Conditions for consideration by the WVCA:

- **Section 11 - Liquidated Damages** - Delete this section because it is not applicable to Professional Engineer Design Services.
- **Section 14 - Payment** - Add the following language to this section:
 - » Payment terms: Net 30 days.
- **Section 26 - Warranty** - Delete the entire paragraph and include the following:
 - » Warranty - The Vendor agrees to correct or re-perform without additional cost to Agency, any service not performed in accordance with the standard of care prevailing at the time and in the place where such service is performed.
- **Section 36- Indemnification** - Amend the first sentence to state:
 - » The Vendor agrees to indemnify, defend and hold harmless the State and the Agency, their officers, and employees from and against to the extent and in the proportion that:.....

More than Engineering Solutions

All materials printed on recycled paper. 

