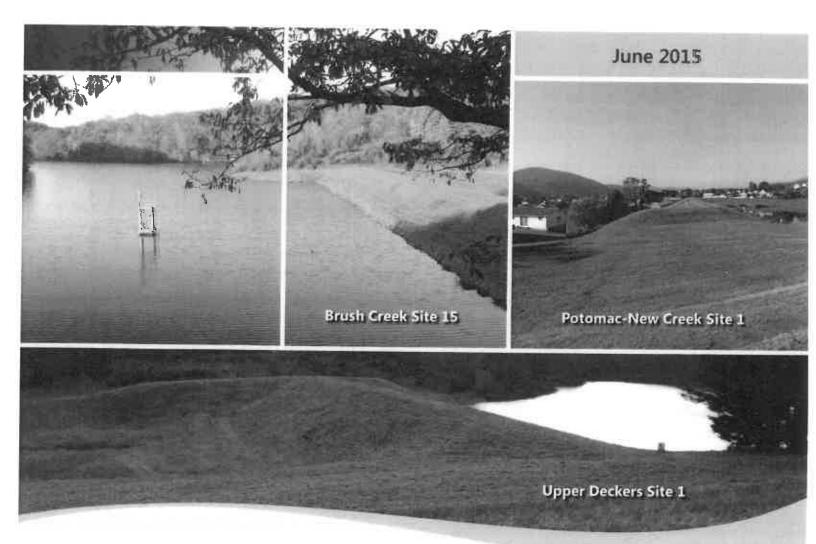


Watershed Dam Rehabilitation Program



Submitted by:

06/03/15 09:31:40 WW Purchasine Division





June 2, 2015

Ms. Laura Hooper, Buyer West Virginia Conservation Agency 2019 Washington Street, East Charleston, WV 25305

RE: Expression of Interest – Watershed Dam Rehabilitation Program

Ms. Hooper:

To assist the West Virginia Conservation Agency (WVCA) with the planning required for several floodwater prevention dams along with construction of the Upper Deckers Creek Site 1 Dam, Gannett Fleming, Inc. assembled a team with extensive and broad dam engineering expertise and environmental investigation and assessment proficiency, specifically in West Virginia. Gannett Fleming has provided dam engineering services for Natural Resource Conservation Service (NRCS) dams in West Virginia for the past 20 years. Many of these dams required environmental investigations, planning, design, and construction inspection services. Our team members have great working relationships with NRCS and the state and local regulatory agencies, which allows us to easily help you navigate the permitting process and helps to maintain the project schedule.

Gannett Fleming's first three projects 100 years ago were the design of dams. Since that time, we have designed or rehabilitated more than 200 dams throughout the country. Our personnel are experts in their field and consistently contribute to identifying innovative dam safety solutions and sharing this information with dam owners and engineers throughout the industry. Paul Schweiger, PE, CFM, our Project Manager and a West Virginia Professional Engineer, regularly provides Dam Owner and Engineering Workshops and Emergency Action Planning Exercises throughout the country. Our personnel will use this experience to efficiently provide planning services using the most current NRCS approved computer models and analysis methodologies to evaluate the full range of dam rehabilitation options available to address deficiencies at each site while assessing the costs, benefits, and impacts of each alternative to establish the preferred alternative.

We have included Cultural Resources Analysts, Inc. (CRA) on our team to provide cultural resources services. Their extensive experience includes working with state and federal agencies on survey and evaluation strategies and requirements and the development, negotiation, and implementation of mitigation plans. CRA provided Section 106 cultural resource compliance services for the NRCS at Brush Creek Dam Site 14 and other dam projects within West Virginia for the USACE, Huntington District, involving National Register evaluations, archaeological surveys, and historic property management plans.

By selecting Gannett Fleming for this contract, WVCA will partner with a proven team dedicated to developing dam safety solutions that minimize risk while meeting budget, schedule, and quality objectives by leveraging our:

- Experience and familiarity with these sites
- Experience and familiarity with NRCS WV projects and personnel
- Experience with similar projects and scope of work items
- Qualified and experienced personnel who are dam industry thought leaders

Gannett Fleming, Inc.

P.O. Box 67100 • Harrisburg, PA 17106-7100 | 207 Senate Avenue • Camp Hill, PA 17011-2316 t: 717.763.7211 • f: 717.763.8150

Gannett Fleming

RE: Expression of Interest – Watershed Dam Rehabilitation Program

Page 2

June 2, 2015

Thank you for the opportunity to submit our Expression of Interest to WVCA. Should you have any questions regarding our submission, please do not hesitate to contact me directly at 717-763-7212, ext. 2504 or by email at pschweiger@gfnet.com.

Sincerely,

GANNETT FLEMING, INC.

Paul G. Schweiger, PE, Vice President





Sections A-E





ARCHITECT - ENGINEER QUALIFICATIONS PART I - CONTRACT-SPECIFIC QUALIFICATIONS A. CONTRACT INFORMATION TITLE AND LOCATION (City and State) Watershed Dam Rehabilitation Program, Charleston, WV 2. PUBLIC NOTICE DATE 3. SOLICITATION OR PROJECT NUMBER May 4, 2015 AGR1500000004 B. ARCHITECT-ENGINEER POINT OF CONTACT 4. NAME AND TITLE Paul G. Schweiger, PE, CFM, Vice President NAME OF FIRM Gannett Fleming TELEPHONE NUMBER FAX NUMBER E-MAIL ADDRESS (717) 763-7211 (717) 763-8150 pschweiger@gfnet.com C. PROPOSED TEAM (Complete this section for the prime contractor and all subcontractors) (Check) JV PARTNER SUB-CONT-RACTOR 9. FIRM NAME 10. ADDRESS 11. ROLE IN THIS CONTRACT Gannett Fleming 207 Senate Avenue **Project Manager** Harrisburg, PA Camp Hill, PA 17011 Dam Rehabilitation Alternatives CHECK IF BRANCH OFFICE Public Involvement Project Principal & Quality Assurance/ Quality Control Planning Studies - Task Manager Pollution Control Upper Deckers Creek Site 1 Construction Oversight-Task Manager Hydraulics and Hydrology a. Subsurface Investigation/ Geologic Evaluation Submittal Review Foundation Inspection **NEPA-Lead** Economics/GIS Social Environment/Cultural Resources Natural Resources/Wetland Delineation Prepare Record/As-Built Drawings Survey QC Inspections & Tests/ Document Daily Activities Gannett Fleming Valley Forge Corporate Center **NEPA** √ h. Valley Forge, PA 1010 Adams Avenue CHECK IF BRANCH OFFICE Audubon PA 19403-2402 **Gannett Fleming** Foster Plaza 8, Suite 400 Safety/ Schedule C. Pittsburgh, PA 730 Holiday Drive CHECK IF BRANCH OFFICE Pittsburgh PA 15220-2748 ALTAGER DRIVLING 1857 Woodland Avenue Ext Subsurface Investigation/Geologic Evaluation Punxsutawney, PA 15767 ď. Punxsutawney, PA CHECK IF BRANCH OFFICE 3556 Teays Valley Road, Suite 3 Social Environment/Cultural Resources Hurricane, West Virginia 25526 Hurricane, WV CHECK IF BRANCH OFFICE 151 Walton Avenue Social Environment/Cultural Resources Lexington, KY 40508 f. Lexington, KY CHECK IF BRANCH OFFICE D. ORGANIZATIONAL CHART OF PROPOSED TEAM (Attached)

D. ORGANIZATIONAL CHART OF PROPOSED TEAM.

Lod by Project Manager Paul Schweiger, our team has all the disciplines needed to successfully complete imposts and objectives of the WVCA.

LEGEND:

(CRA) = Cultural Resource Analysts, Inc.



Project Principal & Quality Assurance/Quality Control

Project Manager

Paul G Schweiger, PE, CFM

Rodney E. Holderbaum, PE, PLS, PS

Planning Studies - Task Manager

Eric C Neast, PE

Dam Rehabilitation Alternatives

Donald P. Roarabaugh, PE Robert T. Saber, PE Timothy W. Johnston, PE William J. Franz, PE, PG Paul G. Schweiger, PE, CFM

Hydraulics and Hydrology

Amanda J. Hess, PE, CFM
Benjamin P. Israel-Devadason, PE, CFM
Gregory L. Richards, PE, CFM
William J. Kingston III, CFM

Subsurface Investigation/ Geologic Evaluation

Cari R. Beenenga, PE
David M. Snyder, PE
Jeremy S. Robinson, PG
Edward J. Barben, PE
Andrew J. Smithmyer, PG
L. G. Hetager Drilling, Inc.
Gannett Fleming Soils Laboratory

Gannett Fleming100 Seals 100 Seals

NEPA

Katherine E. Sharpe, AICP - Lead Steven J. Wittig, CE Kristin L. Civitella

Public Involvement

Michelle A. Brummer, AICP Paul G. Schweiger, PE, CFM

Social Environment/ Cultural Resources

Craig S. Shirk, AICP, ENV SP C. Michael Anslinger, RPA (CRA) Elizabeth Heavrin (CRA)

Natural Resources/Wetland Delineation

Steven C. Smith, WPIT David H. Graff, PWS, CE, CWB Corey W. Myers Samantha R. Hockenberry Jillian N. Arnold, CFM

Economics/GIS

Katherine E. Sharpe, AICP Matthew D. Houtz, GISP Christopher D. Krebs, PE, CFM, GISP

Construction Oversight - Task Manager Donald P Roarabaugh, PE

Upper Deckers Creek Site 1

Submittal Review

Vladimir Cecka, PE Cari R. Beenenga, PE

Prepare Record/As-Built Drawings

Chad T. Hoover, EIT

Pollution Control

Eric C. Neast, PE

Survey

Adam J. Moyer, PLS Brian S. Miller, PE, SIT

QC Inspections & Tests/Document Daily Activities

Aaron D. Achenbach, Assoc. DBIA, ENV SP

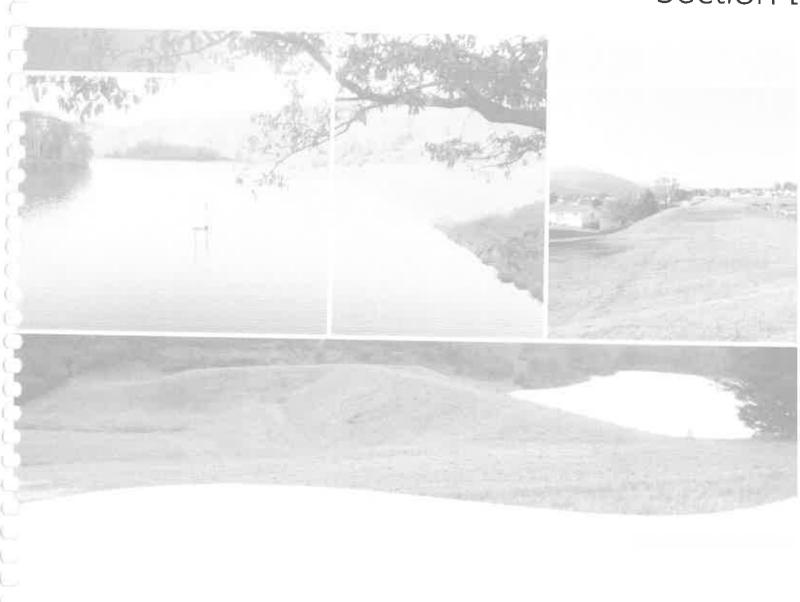
Foundation Inspection

Edward J. Barben, PE David M. Snyder, PE

Safety/Schedule

Michael A. MacAllister, PE

Section E





		E. RESUMES OF KEY PERSO	NNEL PROPOSED F	OR THIS CONTRACT			
	NAME	13. ROLE IN THIS CONTRACT	tion E for each key per		XPERIENCE		
Pa	aul G. Schweiger, PE, CFM	Project Manager; Dam Rehal	ilitation	a. TOTAL	b. WITH CURRENT FIRM		
		Alternatives: Public Involvem		31	28		
15,	FIRM NAME AND LOCATION (City and State)						
16	Garnett Fleming, Harrisbur EDUCATION (DEGREE AND SPECIALIZATIO	g, PA					
B.9	Civil Engineering	ON)	17. CURRENT PROFESSIO	NAL REGISTRATION (STATE AND	DISCIPLINE)		
	S/Hydraulics/Water Resources		Professional Engin	eer/WV, PA, NJ, NY, ND	, IL, VA, AZ, NH		
18,	18. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)						
Pa	ul's areas of expertise include	dam assessments, risk assessme	ents dam design de	sign rovious and budge			
(H	&H) analyses. During his 31 year	ars of experience, he worked or	the design of 10 no	sign review, and nyaro	logic and nydraulic		
se	rved as a Project Manager for r	more than 100 dam projects. P	all serves as an ever	er budseless and budse	nabilitations, and		
US	ACE Independent Peer Review	Panels for DSAC I Dams and ne	w dam designs Ho	is an approved FERC for	iulics Engineer on		
fai	lure-modes analysis exercises f	for dams and an ASDSO instruct	or for conducting o	is all approved FERC 190	ilitator for performing		
Pre	ofessional Organizations: Unit	ed States Society on Dams (USS	D): Association of c	ignieering and dam-ow	ner workshops.		
		10 DELEVAL	NT PROJECTS	tate Dam Safety Official	s (ASDSO)		
	(1) TITLE AND LOCATION (City and State)		WIT MODEO TO	(2) YEAR	COMPLETED		
	Upper Deckers Creek Site 1 (Dam, Preston County, WV		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)		
			Section F #1	Ongoing (2016)	N/A		
a.	(3) BRIEF DESCRIPTION (Brief scope, size	e, cost, etc.) AND SPECIFIC ROLE		Check if project p	erformed with current firm		
	Natural Resources Conservat	ion Service (NRCS). Project Mai	nager/Principal cond	lucting planning study	المسام والمسامرين		
	I my are a unic study, auxiliary Spir	iway integrity analyses, dambre	ak analyses, concer	tual alternatives design	nreliminary decign		
	Taura illiai acaign fol Obbel De	eckers Creek Site 1 Dam. Fee: \$	999K (est.)		, premimary design		
	(1) TITLE AND LOCATION (City and State)	· · · · · · · · · · · · · · · · · · ·		(2) YEAR (COMPLETED		
	Lost River Site No. 16, Planni	ing through Final Design,	Section F #6	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)		
	Hardy County, WV		Section r ∉0	2005	N/A		
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE NRCS. Senior Project Manager for the completion of planning-level studies through final design of a new 90-foot-high zoned						
b.	oarthfill flood control of	er for the completion of plannir	g-level studies thro	ugh final decign of a new	WOO fack black according		
	Car trum 11000 Control and Wa	ter supply dam. Detailed hydro	Nogic and hydraulic.	analyses were complex.	وموالة بالمستمين أم		
	l arrea combatel model. The b	Ji Oject included establishing Gl	obal Positioning Syst	tem (CDS) control outer	onica a suist securit		
	or the cost mach valley, stake	out of exploratory drill holes ar	nd test nits on-site a	voloration of subsurface	and the state of t		
	I reporteror & restring or 2011 9UIO	rock samples, materials studies	. zoning/design of ti	se earthfill amhankman	t, proportioning of		
	(1) TITLE AND LOCATION (City and State)	paring final design documents f	or the construction	of the dam. Fee: >\$2M	,, p		
				(2) YEAR C	OMPLETED		
	Elkwater Fork Dam (New RCC	. Dam), Kandolph County,	Section F #7	PROFESSIONAL SERVICES 2011	CONSTRUCTION (if appl.)		
ł				2011	2011		
c.	(3) BRIEF DESCRIPTION (Brief scope, size,	cost, etc.) AND SPECIFIC ROLE	_	Check if project pe	rformed with current firm		
٠.	gravity dam with a construction	er and chief designer for new 13	O-foot-high, 700-foo	ot-long roller-compacte	d concrete (RCC)		
	Provide agus Miris a CONSTRUCTIO	on cost of 533 million. Services	included ground ou	ryove and agricl manufa	and the second control of		
i	design: propagation of plans	and rock materials; hydrologic	and hydraulic analy	ses; preliminary design	and layout; final		
	acago, bicharation of highs, a	specifications, construction cost	t estimate and sched	fule. Tasks also includo	d providing bid-phase		
_	(1) TITLE AND LOCATION (City and State)	rices. Construction was comple	ted in 2009. Fee: \$	1.5M			
	New Creek Site 14 Dam Rehal	hilitation Grant County		(2) YEAR CO			
	WV	bilitation, Grant County,	Section F #2	PROFESSIONAL SERVICES 2013	CONSTRUCTION (if appl.) 2013		
d.							
ŭ.	(3) BRIEF DESCRIPTION (Brief scope, size, ARCS Senior Project Manager	cost, etc.) AND SPECIFIC ROLE		Check if project per	formed with current firm		
	114-foot-high 940-foot long	providing investigations, prelin	ninary and final desi	gn, and construction-pl	hase services for a		
ľ	Snillway armoring a new too	oned earthfill dam rehabilitation	n. Rehabilitation in	cluded slope stabilization	on, RCC auxiliary		
_	(1) TITLE AND LOCATION (City and State)	drain system, and outlet works	modifications. Fee: S	2.4M			
		Quantity Dam Architectural/E		(2) YEAR CO PROFESSIONAL SERVICES			
	Services, Dam Assessments V	Against An Chitectural E	ngineering	2012	CONSTRUCTION (if appl.)		
	(2) BRIEF DESCRIPTION (5 to	W NH NM WI and ND			11/7		
- 1	(3) DRIEF DESCRIPTION (Brief scane size /	VV, NH, NM, WI, and ND					
e.	NRCS. Project Principal prepari	VV, NH, NM, WI, and ND	112 NPCs dame !	Check if project per	ormed with current firm		
e	NRCS. Project Principal prepari	VV, NH, NM, WI, and ND cost, etc.) AND SPECIFIC ROLE ing dam assessment reports for	113 NRCS dams loc	ated throughout the Us	site of Ctobos - Missile		
e	NRCS. Project Principal prepari includes performing dam inspe	VV, NH, NM, WI, and ND cost, etc.) AND SPECIFIC ROLE ing dam assessment reports for ections; conducting reconnaissa	nce of downstream	ated throughout the Ur	nited States. Work		
e	NRCS. Project Principal prepari includes performing dam inspe modeling using HEC-RAS; prepi	VV, NH, NM, WI, and ND COST, etc.) AND SPECIFIC ROLE ing dam assessment reports for ections; conducting reconnaissa aring inundation maps; conduction	nce of downstream	ated throughout the Ur impact areas; performi	nited States. Work ng dam-failure		
e	NRCS. Project Principal prepari includes performing dam inspe modeling using HEC-RAS; prep spillway analyses using SITES; i	VV, NH, NM, WI, and ND cost, etc.) AND SPECIFIC ROLE ing dam assessment reports for ections; conducting reconnaissa	nce of downstream ting hydrologic and reloning rehabilitation	ated throughout the Ur impact areas; performi hydraulic analyses; perf	nited States. Work ng dam-failure		

: :	Strong Control (1987)	(Complete one Section	n E for each key person		name of the
12. NA		13. ROLE IN THIS CONTRACT		14, YEARS EXP	b. WITH CURRENT FIRM
	ey E. Holderbaum, PE, PLS, PS	Project Principal & Quali Assurance/Quality Cont	TY 11		34
	M NAME AND LOCATION (City and State)	Passinglice/ Chanty court			
	annett Fleming, Harrisburg, PA		- TOTAL PROFESSIONA	L REGISTRATION (STATE AND E	(SCIPLINE)
	JCATION (DEGREE AND SPECIALIZATION)		Professional Enginee	r/WV, PA, OH, CO, NY,	GA, IA, NC,
BS/C	ivil Engineering		PLS/PA	,,,,,, .	• •
		(PS/OH		
	HER PROFESSIONAL QUALIFICATIONS (Publications)				
m 1	HER PROFESSIONAL QUALIFICATIONS (Publications) Provides technical oversight of desoneering services on more than 200	ign and construction phase	e services for dam pr	ojects. Throughout his signments for the NRC	career, he provided S. Rod establishes
	 Composition designs port 	forms technical reviews of	concents and design	s, and conducts believ	IC 311C AISIES CITIC
requ	irements for RCC-mix designs, per ultations during construction of da	om robabilitations. He has I	provided quality revi	ew for nearly 15 dam p	rojects and was the
cons	ultations during construction of de ect Director for the Concrete Desig	- Charter for the National	Engineering Handbo	ok, which is used by N	RCS personnel as a
Proj	ect Director for the Concrete Desig	in Chapter for the National	uriediction	,	•
guid	e for designing or repairing concre	ete structures within then j	ASDSO Portland Cer	nent Association	
Prof	essional Organizations: American	Concrete institute, USSD,	T PROJECTS	Henry issociation	
	(1) TITLE AND LOCATION (City and State)	19 KELEVAN	I I NOOLO IO		OMPLETED
2.0	(1) TITLE AND LOCATION (City and State) New Creek Dam 14 Rehabilitation	Grant County, WV		PROFESSIONAL SERVICES	CONSTRUCTION (# appl.) 2013
	MGM CLGGK Dalli T4 VGHSDIII181101	ii, Graint Country, co	Section F #2	2013	2013
1				Check if project pe	rformed with current firm
	(3) BRIEF DESCRIPTION (Brief sacpe, size, cost, to NRCS. Engineering Manager responses	etc.) AND SPECIFIC ROLE	tht of design and cor	struction-phase service	es for upgrading an
a.	NRCS. Engineering Manager respo	onsible for technical oversignation	sint of design and cor	iching requirements fo	r RCC-mix designs.
- 1	existing 114-foot-high, 940-foot-k	ong zoned earthfill dam. R	esponsible for establ	1911iiig requirements to	nducting periodic site
	performing a technical review of o	concepts and designs, atte	nding periodic meeti	ngs with the thems, to	naucting periodic site
1	visits and consultation during con	struction, and allocating re	sources to the proje	CL. Fee. 35IVI	
	(1) TITLE AND LOCATION (City and State)			PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	Elkwater Fork Dam, Randolph Co	ounty, WV	Section F #7	2011	2011
			Section 1 m/	}	!
	(2) PRICE DESCRIPTION (Brief score size cost	etc.) AND SPECIFIC ROLE		Check if project p	erformed with current firm
	(3) BRIEF DESCRIPTION (Brief scope, size, cost	Legardination and manage	ment of investigatio	ns and design of a 130-	foot-high, 700-foot-
b.	NRCS. Project Principal for overal	I coordination and manage	i aerial mapping of ti	ns and design of a 130- he dam and reservoir a	foot-high, 700-foot- rea; subsurface
b.	NRCS. Project Principal for overal	I coordination and manage	i aerial mapping of ti	ns and design of a 130- he dam and reservoir a	foot-high, 700-foot- rea; subsurface
b.	NRCS. Project Principal for overall long RCC gravity dam. Services in	I coordination and manage included ground surveys and drock materials: pre-scree	d aerial mapping of the concrete age	ns and design of a 130- he dam and reservoir a regates for susceptibili	foot-high, 700-foot- rea; subsurface ty to alkali-aggregate
b.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; bydrologic and bydrauli	I coordination and manage nciuded ground surveys and d rock materials; pre-scree ic analyses; preliminary des	i aerial mapping of the ning of concrete agg sign and layout; final	ns and design of a 130- he dam and reservoir a regates for susceptibili design; preparation of	foot-high, 700-foot- rea; subsurface ty to alkali-aggregate
b.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (F	I coordination and manage nciuded ground surveys and d rock materials; pre-scree ic analyses; preliminary des	i aerial mapping of the ning of concrete agg sign and layout; final	ns and design of a 130- he dam and reservoir a regates for susceptibili design; preparation of ule. Fee: \$1.5M	foot-high, 700-foot- rea; subsurface ty to alkali-aggregate plans, specifications,
b.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (F	I coordination and manage ncluded ground surveys and d rock materials; pre-scree c analyses; preliminary des PS&E); and preparation of a	i aerial mapping of the ning of concrete agg sign and layout; final	ns and design of a 130- he dam and reservoir a regates for susceptibili design; preparation of ule. Fee: \$1.5M	foot-high, 700-foot- rea; subsurface ty to alkali-aggregate plans, specifications,
b.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (F	I coordination and manage ncluded ground surveys and d rock materials; pre-scree c analyses; preliminary des PS&E); and preparation of a	ning of concrete agg lign and layout; final a construction sched	ns and design of a 130- he dam and reservoir a regates for susceptibilit design; preparation of ule. Fee: \$1.5M	foot-high, 700-foot- rea; subsurface ty to alkali-aggregate plans, specifications,
b.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (FI) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Period (Principal Control of City and State)	I coordination and manage netuded ground surveys and rock materials; pre-scree is analyses; preliminary desPS&E); and preparation of a sembina County, ND	i aerial mapping of the ning of concrete agg sign and layout; final	ns and design of a 130- he dam and reservoir a regates for susceptibilit design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012	foot-high, 700-foot-rea; subsurface ty to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014
	NRCS. Project Principal for overallong RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (FO) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Period (City and State)	I coordination and manage neluded ground surveys and rock materials; pre-scree ic analyses; preliminary despects; and preparation of a embina County, ND	ning of concrete agg sign and layout; final a construction sched	ns and design of a 130- he dam and reservoir a regates for susceptibilit design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012	foot-high, 700-foot-rea; subsurface ty to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Deformed with current firm
b.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Period (3) BRIEF DESCRIPTION (Brief scope, size, cost, and state)	I coordination and manage neluded ground surveys and rock materials; pre-scree ic analyses; preliminary despectively; and preparation of a sembina County, ND	ning of concrete agg sign and layout; final a construction sched Section F #9	ns and design of a 130- he dam and reservoir a regates for susceptibilit design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project r review of 90 percent	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# app.) 2014 Derformed with current firm design documents
	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Period (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and	I coordination and manage neluded ground surveys and rock materials; pre-scree ic analyses; preliminary desposses; and preparation of a sembina County, ND Description of the county of	sacrial mapping of the ning of concrete agg sign and layout; final a construction schedule. Section F #9 and performing peeps a work plan, coor	ns and design of a 130- he dam and reservoir a regates for susceptibilit design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project p r review of 90 percent dinating review team e	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appi.) 2014 Denformed with current firm design documents fforts, and reviewing
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	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Period (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings as	I coordination and manage included ground surveys and rock materials; pre-scree ic analyses; preliminary desponds and preparation of a sembina County, ND Teta:) AND SPECIFIC ROLE Senior Engineer managing in Responsible for developinal specifications for propositions.	sacrial mapping of the ning of concrete agg sign and layout; final a construction schedule. Section F #9 and performing peeps a work plan, coor	ns and design of a 130- he dam and reservoir a regates for susceptibility design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project p r review of 90 percent d dinating review team e f a multipurpose earthf	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Deformed with current firm design documents fforts, and reviewing ill embankment dam
	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Pe (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings at located in North Dakota. Fee: \$40	I coordination and manage included ground surveys and rock materials; pre-scree ic analyses; preliminary desponds and preparation of a sembina County, ND Teta:) AND SPECIFIC ROLE Senior Engineer managing in Responsible for developinal specifications for propositions.	sacrial mapping of the ning of concrete agg sign and layout; final a construction schedule. Section F #9 and performing peeps a work plan, coor	ns and design of a 130- he dam and reservoir a regates for susceptibility design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project p r review of 90 percent dinating review team e f a multipurpose earthf	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Deformed with current firm design documents fforts, and reviewing ill embankment dam
	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Pe (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings a located in North Dakota. Fee: \$4(1) TITLE AND LOCATION (City and State)	I coordination and manage neluded ground surveys and rock materials; pre-scree ic analyses; preliminary desposses; and preparation of a sembina County, ND Teta.) AND SPECIFIC ROLE Senior Engineer managing Responsible for developing and specifications for proposes 66K	sacrial mapping of the ning of concrete agging and layout; final a construction sched. Section F #9 and performing peeing a work plan, coordised rehabilitation of	ns and design of a 130- he dam and reservoir a regates for susceptibility design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project p r review of 90 percent dinating review team e a multipurpose earthf (2) YEAR PROFESSIONAL SERVICES	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Deformed with current firm design documents fforts, and reviewing ill embankment dam COMPLETED CONSTRUCTION (# appl.)
	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Pe (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings at located in North Dakota. Fee: \$40	I coordination and manage neluded ground surveys and rock materials; pre-scree ic analyses; preliminary desposses; and preparation of a sembina County, ND Teta.) AND SPECIFIC ROLE Senior Engineer managing Responsible for developing and specifications for proposes 66K	sacrial mapping of the ning of concrete agg sign and layout; final a construction schedule. Section F #9 and performing peeps a work plan, coor	ns and design of a 130- he dam and reservoir a regates for susceptibility design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project p r review of 90 percent dinating review team e f a multipurpose earthf	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Deformed with current firm design documents fforts, and reviewing ill embankment dam
	Ing RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (F(1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Pe (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings a located in North Dakota. Fee: \$4(1) TITLE AND LOCATION (City and State) Various Dam Engineering Services	I coordination and manage included ground surveys and rock materials; pre-scree ic analyses; preliminary despects and preparation of a embina County, ND Detail AND SPECIFIC ROLE Senior Engineer managing in Responsible for developing and specifications for propositions. Chester County, PA	sacrial mapping of the ning of concrete agging and layout; final a construction sched. Section F #9 and performing peeing a work plan, coordised rehabilitation of	ns and design of a 130- he dam and reservoir a regates for susceptibilit design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project p r review of 90 percent dinating review team e f a multipurpose earthf PROFESSIONAL SERVICES Ongoing (2016)	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (Fappl.) 2014 Derformed with current firm design documents fforts, and reviewing ill embankment dam COMPLETED CONSTRUCTION (Fappl.) N/A
	NRCS. Project Principal for overallong RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Pe (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings a located in North Dakota. Fee: \$4(1) TITLE AND LOCATION (City and State) Various Dam Engineering Service	I coordination and manage neluded ground surveys and rock materials; pre-scree ic analyses; preliminary desponds and preparation of a sembina County, ND Petc.) AND SPECIFIC ROLE Senior Engineer managing in Responsible for developing and specifications for proposes. Chester County, PA	section F #8	ns and design of a 130- he dam and reservoir a regates for susceptibilit design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project p r review of 90 percent dinating review team e f a multipurpose earthf PROFESSIONAL SERVICES Ongoing (2016)	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Derformed with current firm design documents fforts, and reviewing ill embankment dam COMPLETED CONSTRUCTION (# appl.) N/A performed with current firm
	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil am reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Pe (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings a located in North Dakota. Fee: \$4(1) TITLE AND LOCATION (City and State) Various Dam Engineering Services (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS) and State (Company) and State (Com	I coordination and manage included ground surveys and rock materials; pre-scree ic analyses; preliminary despects and preparation of a sembina County, ND Metc.) AND SPECIFIC ROLE Senior Engineer managing in Responsible for developing and specifications for proposition of the second specifications for propositions. Chester County, PA Metc.) AND SPECIFIC ROLE To Authority (CCWRA) Project	sacrial mapping of the ning of concrete agging and layout; final a construction schedule section F #9 and performing peeing a work plan, coordised rehabilitation of Section F #8 Section F #8	ns and design of a 130- he dam and reservoir a regates for susceptibility design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project is r review of 90 percent is dinating review team et a multipurpose earthf (2) YEAR PROFESSIONAL SERVICES Ongoing (2016) Check if project tant Project Manager f	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Derformed with current firm design documents fforts, and reviewing fill embankment dam COMPLETED CONSTRUCTION (# appl.) N/A performed with current firm or allocation of
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C.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (F(1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Pe (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings a located in North Dakota. Fee: \$4(1) TITLE AND LOCATION (City and State) Various Dam Engineering Service (3) BRIEF DESCRIPTION (Brief scope, size, cost, Chester County Water Resources resources, review and development including annual dam inspection observed deficiencies at the dam	I coordination and manage included ground surveys and rock materials; pre-scree ic analyses; preliminary desponds and preparation of a sembina County, ND Metc.) AND SPECIFIC ROLE Senior Engineer managing in Responsible for developing and specifications for propositions, AND SPECIFIC ROLE Set.) AND SPECIFIC ROLE Set., AND SPECIFIC ROLE Set.	section F #8 Section F #8 ct Principal and Assisality review of final way action operation a	ns and design of a 130- he dam and reservoir a regates for susceptibilit design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project p r review of 90 percent dinating review team e f a multipurpose earthf PROFESSIONAL SERVICES Ongoing (2016) Check if project tant Project Manager f ork products for various and maintenance plans, retion of reports to doc	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Derformed with current firm design documents fforts, and reviewing fill embankment dam COMPLETED CONSTRUCTION (# acpl.) N/A performed with current firm or allocation of its assignments investigation of ument findings. Fee:
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C.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil am reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Pe (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings a located in North Dakota. Fee: \$4(1) TITLE AND LOCATION (City and State) Various Dam Engineering Service (3) BRIEF DESCRIPTION (Brief scope, size, cost Chester County Water Resources resources, review and developm including annual dam inspection observed deficiencies at the dam \$2.5M (est.)	I coordination and manage included ground surveys and drock materials; pre-scree ic analyses; preliminary despects and preparation of a sembina County, ND Metc.) AND SPECIFIC ROLE Senior Engineer managing in Responsible for developing and specifications for proposition of a section of a se	section F #8 Section F #8 ct Principal and Assisality review of final way action operation a	ns and design of a 130- ne dam and reservoir a regates for susceptibility design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project of a multipurpose earthf PROFESSIONAL SERVICES Ongoing (2016) Check if project than the project Manager of the products for various and maintenance plans, ration of reports to doc	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Deformed with current firm design documents fforts, and reviewing ill embankment dam COMPLETED CONSTRUCTION (# acpl.) N/A performed with current firm or allocation of its assignments, investigation of ument findings. Fee:
C.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Pe (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings a located in North Dakota. Fee: \$4(1) TITLE AND LOCATION (City and State) Various Dam Engineering Service (3) BRIEF DESCRIPTION (Brief scope, size, cost, Chester County Water Resources resources, review and developm including annual dam inspection observed deficiencies at the dam \$2.5M (est.) (1) TITLE AND LOCATION (City and State) Water Resources Studies, Hardy	I coordination and manage included ground surveys and drock materials; pre-scree ic analyses; preliminary desposses; preliminary desposses; and preparation of a sembina County, ND Metc.) AND SPECIFIC ROLE Senior Engineer managing in Responsible for developing and specifications for proposes Metc.) AND SPECIFIC ROLE Senior Engineer managing in the specifications for proposes Metc.) AND SPECIFIC ROLE M	section F #8 Section F #8 ct Principal and Assisality review of final way action operation a	ns and design of a 130- ne dam and reservoir a regates for susceptibility design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project of a multipurpose earthf PROFESSIONAL SERVICES Ongoing (2016) Check if project than the project Manager of the products for various and maintenance plans, ration of reports to doc (2) YEAR PROFESSIONAL SERVICES Ongoing (2016)	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Derformed with current firm design documents fforts, and reviewing ill embankment dam COMPLETED CONSTRUCTION (# aepl.) N/A performed with current firm or allocation of its assignments investigation of ument findings. Fee:
c.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Perincipal Revie	I coordination and manage included ground surveys and rock materials; pre-scree ic analyses; preliminary desponds of a sembina County, ND The sembina	section F #8 Section F #8 ct Principal and Assisality review of final way action operation aconcepts, and prepar	ns and design of a 130- ne dam and reservoir a regates for susceptibility design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project of a multipurpose earthf PROFESSIONAL SERVICES Ongoing (2016) Check if project than the project of t	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Deformed with current firm design documents fforts, and reviewing ill embankment dam COMPLETED CONSTRUCTION (# appl.) N/A performed with current firm or allocation of its assignments, investigation of ument findings. Fee: COMPLETED CONSTRUCTION (# appl.) N/A performed with current firm
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c.	NRCS. Project Principal for overall long RCC gravity dam. Services in exploration and testing of soil and reaction; hydrologic and hydrauli and construction cost estimate (Fig. 1) TITLE AND LOCATION (City and State) Renwick Dam Design Review, Pe (3) BRIEF DESCRIPTION (Brief scope, size, cost, NRCS. Project Administrator and prepared by NRCS, North Dakota civil features and RCC drawings a located in North Dakota. Fee: \$4(1) TITLE AND LOCATION (City and State) Various Dam Engineering Service (3) BRIEF DESCRIPTION (Brief scope, size, cost, Chester County Water Resources resources, review and developm including annual dam inspection observed deficiencies at the dam \$2.5M (est.) (1) TITLE AND LOCATION (City and State) Water Resources Studies, Hardy	I coordination and manage included ground surveys and drock materials; pre-scree ic analyses; preliminary desposses; preliminary desposses; and preparation of a sembina County, ND Sembi	section F #8 Section F #8 Act Principal and Assistity review of final way action operation acconcepts, and preparent of water resourting the safe yield of the resource of the safe yield of the safe yield of the resource of the safe yield of the yield	ns and design of a 130- he dam and reservoir a regates for susceptibility design; preparation of ule. Fee: \$1.5M PROFESSIONAL SERVICES 2012 Check if project of a multipurpose earthf (2) YEAR PROFESSIONAL SERVICES Ongoing (2016) Check if project tant Project Manager of ork products for various and maintenance plans, ration of reports to doc (2) YEAR PROFESSIONAL SERVICES Ongoing (2016) Check if project and maintenance plans ration of reports to doc (2) YEAR PROFESSIONAL SERVICES 2003 Check if project and report two existing reservoirs	foot-high, 700-foot-rea; subsurface by to alkali-aggregate plans, specifications, COMPLETED CONSTRUCTION (# appl.) 2014 Derformed with current firm design documents fforts, and reviewing fill embankment dam COMPLETED CONSTRUCTION (# appl.) N/A Performed with current firm or allocation of its assignments investigation of ument findings. Fee: COMPLETED CONSTRUCTION (# appl.) N/A Performed with current firm is completed for three is and one river intake

		(Complete one Sec	DNNEL PROPOSED F	OR THIS CO	NTRACT		
Er	ic C. Neast, PE	13. ROLE IN THIS CONT	rract s - Task Manager;	a, TOTAL 26	14. YEARS EX	D. WITH CURRENT FIRM	
15.	FIRM NAME AND LOCATION (City and State)		<u>. </u>				
16.	Education (Degree and Specialization)		47 CURRENT PROPERCY	ONLY DECISION			
BS	S/Civil Engineering		17. CURRENT PROFESSI Professional Engir	ONAL REGISTRA Deer/PA	TION (STATE AND	DISCIPLINE)	
18.	OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organ	nizations, Training, Awards,	etc)				
as	ver his 26-year career, Eric has developed a sessment, rehabilitation design, and breach	broad background	in the managemen	t of hydrolo	gy, hydraulics	s, and dam	
sn	sessment, rehabilitation design, and breach nall to mid-sized recreational lake dam proje	ing projects along	with specialized ex	pertise in se dovolopod a	dimentation (erosion control for	
sta	ate and local regulatory agencies and their p	permitting process.	while successfully	cultivating k	specializeu u ev relationsh	ins with stakeholders	
Im	cluding local Authorities, state agencies, Cha	ambers of Commer	rce, and local comm	iunity group	s In the nast	10 years alone Eric	
110	is served as Project Manager or Engineer on	more than 15 dan	n assessment and e	ngineering p	rojects wher	e he has successfully	
CO	mpleted the assessment, permit preparatio	n, and design of da	ams.				
	(1) TITLE AND LOCATION (City and State)	19 RELEVA	NT PROJECTS		(2) YEAR O	OVELETED	
	Harmon Creek Riser Structure Modificati	ons, Brook			NAL SERVICES	CONSTRUCTION (if appl.)	
	County, WV		Section F #2	2	.013	2013	
a.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SI	PECIFIC ROLE			Check if project pe	rformed with current firm	
	NRCS. Water Resources Engineer for mod	ification of six 2-st	age riser structures	within the	Harmon Cree	k watershed to	
	address chronic clogging of the lower opening that sets normal pool. Evaluated existing trash racks and lower level orifices; developed alternate trash rack options including modifications to the existing and complete reconstruction; modified the						
	l lower level orlitices; and prepared design i	reports, cost estim	ates and construct	ina compieti ion docume	e reconstruct	ion; modified the	
	(1) TITLE AND LOCATION (City and State)		ares, and construct		(2) YEAR C	OMPLETED	
	New Creek Site 14 Dam Rehabilitation, K		Section F #2		NAL SERVICES 013	CONSTRUCTION (if appl.) 2013	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE AND CE Project For investigation of the project performed with current firm						
b.	NRCS. Project Engineer providing design and construction-phase support services for the rehabilitation of a 114-foot-high, 940-foot-long zoned earthfill dam. Design-phase support included the preparation of an erosion control plan and permitting						
	Construction-phase support services inclu	i-biiase support ini ded shop drawing	cluded the prepara	tion of an er	osion control	plan and permitting.	
	coordination with survey subconsultant; a	and response to rea	quests for informat	orumation r ion. Rehahi	neeting with i	ures included slope	
	Stabilization, RCC spillway armoring, a nev	v toe-drain system	, and outlet works	modification	ns. Fee: \$3M	ures included slope	
	(1) THEE AND LOCATION (City and State)				(2) YEAR CO		
	Elkwater Fork Dam, Randolph County, W	V	Section F #7		NAL SERVICES 011	CONSTRUCTION (if appl.) 2011	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SP	FOIEIC BOI E					
C.	NRCS. Water Resources Engineer responsi	ble for preparing a	n erosion and sedi	ment contro	I plan for the	formed with current firm	
	laden runoff from both the dam construct	ion site (a new 130	0-foot high roller-co	empacted co	ncrete water	odt bac (msb ylanus	
	associated staging/laydown areas and acci	ess roads. Also ass	sisted with various i	final design .	analyses and	activities including	
	hiebaration of design details, specification	is, and constructio	n cost estimates. C	construction	-phase servic	es included	
	responding to requests for information an (1) TITLE AND LOCATION (City and State)	d shop drawing re	views. Fee: \$1.5M (fee)			
	Hibernia Dam, Chester County, PA			PROFESSIO	(2) YEAR CO NAL SERVICES	CONSTRUCTION (if appl.)	
			Section F #8	Ongoin	ıg (2016)	N/A	
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SP	ECIFIC ROLE			Check if project per	formed with current firm	
	CCWRA. Water Resources Engineer respon	sible for the prepa	ration of an erosio	n and sedim	ent nollution	control plan for a	
	new siphon system installed at the crest of	the dam. Design	included controls for	or site acces	s routes, stag	ging/laydown areas	
	and in-lake work areas. Performed an assemeasures which can be implemented to re	duce sediment los	itributing watershe	d to identify	potential lan	id treatment	
	(1) THEE AND EDUCATION (ONly and State)		ding to the reserve	T Fee: \$2.:	(2) YEAR CO	MPLETED	
	Shenango Intake Dam Rehabilitation Proje	ect, Sharon, PA			NAL SERVICES	CONSTRUCTION (if appl.)	
Ì	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPE	ECIFIC ROLF			O11	2011	
е.	Aqua Pennsylvania, Inc. Assistant Project N	lanager for an Alte	ernatives Analysis fo	eaturing dar	n modificatio	ormed with current firm	
	structural and public safety concerns at Shi	enango Intake Dan	n, a 110-foot-long l	ow-head dai	m. Alternativ	es considered	
	included grouted boulder fill on the downs	tream face, a rock	-ramp fishway, and	structural n	nodifications	Hydronower	
	alternatives were also analyzed. Responsit	pilities included pe	rmitting and constr	uction-phas	e services. Fe	e: \$300K	

		E. RESUMES OF KEY PERSO	NNEL PROPOSED FOR	THIS CON	TRACT	and the second second			
135		(Complete one Sect	ion E for each key persor	n.)					
12. N/		13. ROLE IN THIS CONTRACT	netruction Overeight	- Task	a, TOTAL	B. WITH CURRENT FIRM			
Don	iald P. Roarabaugh, PE	Upper Deckers Creek Site 1 Con	Alternatives	- 143K	18	17			
4E ==	Manager; Dam Rehabilitation Alternatives 15. FIRM NAME AND LOCATION (City and State)								
	Sannett Fleming , Harrish								
16. Ei	DUCATION (DEGREE AND SPECIALIZ	ATION)	17. CURRENT PROFESSIONA		TION (STATE AND D	ISCIPLINE)			
BS/6	Civil Engineering		Professional Enginee	er/PA	<u> </u>				
	THE PROFESSIONAL OLIVINICATION	ONS (Publications, Organizations, Training, Awards, e	etc.) NIBCS dam projects Di	on provid	les constructio	n-phase support for			
Don	has served on nearly 15 o	dam rehabilitation projects and 10	support for conventi	onal mass	concrete and	RCC dam projects.			
vari	ety of dams, with a partici	ular specialty for providing start-up de developing and implementing qu	nality accurance/quali	ity contro	nrograms for	the construction of			
His	technical specialties includ	de developing and implementing di lass concrete mix designs, and perfo	orming mass concrete	material	studies and th	nermal analyses.			
con	crete dams, developing m	USSD, ASDSO, American Society of	Civil Engineers Ameri	ican Conc	rete Institute	, 			
Pro	fessional Organizations:	USSD, ASDSO, American Society of	NT PROJECTS	Ican conc	100011130100				
	(1) TITLE AND LOCATION (City and S		I I I KOOLO IO		(2) YEAR CO				
]		e 1 Dam Rehabilitation, Preston	Carles F 84		DNAL SERVICES	CONSTRUCTION (if appl.) N/A			
	County, WV	•	Section F #1	Ungoi	ng (2016)				
2	(a) DD DE DECODIDEION (Designation	ne, size, cost, efc.) AND SPECIFIC ROLE		×	Check if project per	formed with current firm			
	NRCS Assistant Project N	Manager and Lead Civil Designer de	veloping conceptual,	prelimina	ry and final de	esign documents for			
	rehabilitation of a 46-foo	ot-high zoned embankment dam. L	ed civil design tasks at	nd coordi	nated efforts	of the design team			
- 4	for field surveys: prepare	ed contract drawings, specifications	s, structural details, RO	CC materi	al investigatio	ns and preliminary			
a.	RCC mix designs design	reports, performance time (project	: schedule) estimates,	, construct	tion cost estin	lates, quality control			
	measures and a quality a	assurance plan, erosion and sedime	ent control plan, bid so	chedule, II	nspection star	nng pian, operation			
	and maintenance plan a	and instructions to the engineer to b	be used during the co	nstruction	n phase. Feati	ires of the			
i	rehabilitation include rai	and maintenance plan, and instructions to the engineer to be used during the construction phase. Features of the rehabilitation include raising the normal pool by approximately 11 feet to augment water supply and conservation releases;							
	flattening the embankme	ent slopes to improve slope stabilit	v; constructing a new	internal (drainage syste	m, new principal			
	spillway riser structure, i	new RCC auxiliary spillway; and aba	andoning existing vege	etated eai	rth auxiliary sp	illway. Fee: \$999K			
	(est.)								
	(1) TITLE AND LOCATION (City and			PROFESSI	CNAL SERVICES	CONSTRUCTION (if appl.)			
	New Creek Site 14 Dam	Rehabilitation, Keyser, WV	Section F #2	1	2013	2013			
	(3) BRIEF DESCRIPTION (Brief sco)	pe, size, cost, etc.) AND SPECIFIC ROLE			Check if project person of a 114 for	rformed with current firm			
						st-high 940-foot-long			
h	NRCS. Project Manager	managing construction-phase supp	off services for the re	habilitatio	on or a 114-100	ot-high, 940-foot-long			
b.	zoned earthfill dam Pro	managing construction-phase supp ovided resident engineering service	s during the RCC trial-	-mix batch	ning, triai piac	ement, and			
b.	zoned earthfill dam. Pro	managing construction-phase supp ovided resident engineering service of the RCC Construction-phase sup	es during the RCC trial- port services included	-mix batch d full-time	resident insp	ection, shop drawing			
b.	zoned earthfili dam. Pro	managing construction-phase supp ovided resident engineering service of the RCC. Construction-phase sup atching and testing, and inspection	es during the RCC trial- port services included . Rehabilitation included	-mix batch d full-time ded slope	ning, triai piac resident insp stabilization r	ection, shop drawing neasures, installation			
b.	zoned earthfili dam. Pro production placement o reviews, RCC trial-mix ba of a toe and chimney dr	managing construction-phase supp ovided resident engineering service of the RCC. Construction-phase sup atching and testing, and inspection rainage system, construction of a ne	is during the RCC trial- port services included . Rehabilitation include w 85-foot riser intake	-mix batch d full-time ded slope e structure	ning, trial place resident inspess stabilization r e, placement o	ection, shop drawing neasures, installation			
b.	zoned earthfili dam. Pro production placement o reviews, RCC trial-mix ba of a toe and chimney dra of RCC for spillway armo	managing construction-phase supp ovided resident engineering service of the RCC. Construction-phase sup atching and testing, and inspection ainage system, construction of a ne oring and enlargement, and outlet to	is during the RCC trial- port services included . Rehabilitation include w 85-foot riser intake	-mix batch d full-time ded slope e structure	ning, trial place resident inspiration r stabilization r e, placement o	ection, shop drawing neasures, installation of 26,000 cubic yards			
b.	zoned earthfili dam. Pro production placement o reviews, RCC trial-mix ba of a toe and chimney dr of RCC for spillway armo (1) TITLE AND LOCATION (City and	managing construction-phase supp ovided resident engineering service of the RCC. Construction-phase sup atching and testing, and inspection ainage system, construction of a ne oring and enlargement, and outlet of state)	es during the RCC trial- port services included . Rehabilitation include ew 85-foot riser intake works modifications.	-mix batch d full-time ded slope e structure Fee: \$3M	ring, trial place resident inspiration re, placement of (2) YEAR (CONAL SERVICES	ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.)			
b.	zoned earthfili dam. Pro production placement o reviews, RCC trial-mix ba of a toe and chimney dra of RCC for spillway armo	managing construction-phase supp ovided resident engineering service of the RCC. Construction-phase sup atching and testing, and inspection ainage system, construction of a ne oring and enlargement, and outlet of state)	is during the RCC trial- port services included . Rehabilitation include w 85-foot riser intake	-mix batch d full-time ded slope e structure Fee: \$3M	resident inspo stabilization r e, placement o	ection, shop drawing neasures, installation of 26,000 cubic yards			
b.	zoned earthfili dam. Proproduction placement of reviews, RCC trial-mix based of a toe and chimney draw of RCC for spillway armoduli TITLE AND LOCATION (City and Lost River Site 16, Hards	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase supportion and testing, and inspection aimage system, construction of a neoring and enlargement, and outlet of State) y County, WV	es during the RCC trial- port services included . Rehabilitation include ew 85-foot riser intake works modifications.	-mix batch d full-time ded slope e structure Fee: \$3M	resident insponses the resident insponses the stabilization represented to the stabilization represented to the stabilization in the stabilization represented to the	ement, and ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A			
b	zoned earthfili dam. Proproduction placement of reviews, RCC trial-mix based of a toe and chimney day of RCC for spillway armount of RCC for S	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase suppatching and testing, and inspection ainage system, construction of a neoring and enlargement, and outlet variety (County, WV)	es during the RCC trial- port services included . Rehabilitation include ew 85-foot riser intake works modifications. Section F #6	-mix batch d full-time ded slope e structure Fee: \$3M	resident inspiration re, placement of (2) YEAR (2) YEAR (2) YEAR (2) YEAR (3) YEAR (4) YEAR (4) YEAR (5) YEAR (5) YEAR (5) YEAR (6) YEAR (ement, and ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A erformed with current firm			
	zoned earthfili dam. Proproduction placement of reviews, RCC trial-mix based of a toe and chimney day of RCC for spillway armount of RCC project in the RCC project in	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase suppatching and testing, and inspection rainage system, construction of a neoring and enlargement, and outlet of State) y County, WV Type, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and deve	es during the RCC trial- port services included Rehabilitation include w 85-foot riser intake works modifications. Section F #6	-mix batch d full-time ded slope e structure Fee: \$3M PROFESS	ning, trial place resident inspiration re, placement of (2) YEAR (3) YEAR (4) YEAR (5) YEAR (5) YEAR (5) YEAR (5) YEAR (5) YEAR (6) YEAR (6) YEAR (6) YEAR (6) YEAR (6) YEAR (7) YEAR (ement, and ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A erformed with current firm a new 90-foot-high			
	zoned earthfill dam. Proproduction placement of reviews, RCC trial-mix based of a toe and chimney day of RCC for spillway armount of RCC for spillway for spillway for spill dam. The review of RCC for spillway armount of	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase suppatching and testing, and inspection ainage system, construction of a neoring and enlargement, and outlet of Stafe) y County, WV Ope, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and development scope of work included e	es during the RCC trial- port services included Rehabilitation include works modifications. Section F #6 elopment of auxiliary services	-mix batch d full-time ded slope e structur Fee: \$3M PROFESS spillway a ol, aerial r	resident inspiration replacement of the project point of the project poi	ement, and ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A Performed with current firm a new 90-foot-high ecout of exploratory			
	zoned earthfill dam. Proproduction placement of reviews, RCC trial-mix based of a toe and chimney draw of RCC for spillway armound to the reviews of the spillway armound the spillway armound the spillway armound to the spi	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase suppatching and testing, and inspection ainage system, construction of a neoring and enlargement, and outlet of State) y County, WV Dope, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and develop project scope of work included ensiste exploration of subsurface of	es during the RCC trial- port services included Rehabilitation include Rehabilitation include works foot riser intake works modifications. Section F #6 elopment of auxiliary s stablishing GPS contro conditions, laboratory	-mix batch d full-time ded slope e structure Fee: \$3N PROFESS spillway a ol, aerial r testing, n	resident insponse resident insponse stabilization replacement of (2) YEAR (2) YEAR (3) YEAR (3) YEAR (4) YEAR (4) YEAR (5) YEAR (5) YEAR (5) YEAR (5) YEAR (5) YEAR (5) YEAR (6) YEAR (ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A erformed with current firm a new 90-foot-high eout of exploratory es, preliminary zoning			
	zoned earthfill dam. Proproduction placement of reviews, RCC trial-mix based of a toe and chimney day of RCC for spillway armoderic for s	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase suppatching and testing, and inspection ainage system, construction of a neoring and enlargement, and outlet of State) y County, WV Topo, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and development of subsurface consite exploration of subsurface cofill embankment, H&H analyses, an	es during the RCC trial- port services included Rehabilitation include Rehabilitation include works foot riser intake works modifications. Section F #6 elopment of auxiliary s stablishing GPS contro conditions, laboratory	-mix batch d full-time ded slope e structure Fee: \$3M PROFESS spillway a ol, aerial r testing, n rious hydr	resident inspected placement of the control of the	ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A Provinced with current firm a new 90-foot-high eout of exploratory es, preliminary zoning es. Fee: >\$2M			
	zoned earthfili dam. Proproduction placement or reviews, RCC trial-mix base of a toe and chimney day of RCC for spillway armount of RCC for sp	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase suppatching and testing, and inspection ainage system, construction of a neoring and enlargement, and outlet of State) y County, WV Topo, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and development of subsurface of the exploration of subsurface of the embankment, H&H analyses, and d State)	es during the RCC trial- port services included Rehabilitation include Rehabilitation include Rew 85-foot riser intake works modifications. Section F #6 Pelopment of auxiliary services Stablishing GPS control conditions, laboratory d proportioning of var	-mix batch d full-time ded slope e structure Fee: \$3M PROFESS spillway a ol, aerial r testing, n rious hydr	resident inspect placement of (2) YEAR (2) YEAR (3) YEAR (4) The control of the c	ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A erformed with current firm a new 90-foot-high eout of exploratory es, preliminary zoning es. Fee: >\$2M COMPLETED CONSTRUCTION (# appl.)			
	zoned earthfill dam. Proproduction placement of reviews, RCC trial-mix based of a toe and chimney draws of RCC for spillway armount of RCC for spillway armount (1) TITLE AND LOCATION (City and Lost River Site 16, Hardway 19). BRIEF DESCRIPTION (Brief see NRCS. Project Engineer 19). Zoned-earthfill dam. The drill holes and test pits, and design of the earthful (1) TITLE AND LOCATION (City and Renwick Dam Rehability).	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase suppatching and testing, and inspection ainage system, construction of a neoring and enlargement, and outlet of State) y County, WV Topo, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and development of subsurface consite exploration of subsurface cofill embankment, H&H analyses, an	es during the RCC trial- port services included Rehabilitation include Rehabilitation include works foot riser intake works modifications. Section F #6 elopment of auxiliary s stablishing GPS contro conditions, laboratory	rmix batch difull-time ded slope e structure Fee: \$3M PROFESS spillway a ol, aerial r testing, n rious hydr	resident inspiration replacement of the placement of the	ement, and ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A erformed with current firm a new 90-foot-high eout of exploratory es, preliminary zoning es. Fee: >\$2M COMPLETED CONSTRUCTION (# appl.) 2014			
	zoned earthfill dam. Proproduction placement of reviews, RCC trial-mix based of a toe and chimney draw of RCC for spillway armount of RCC for	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase suppatching and testing, and inspection aimage system, construction of a neoring and enlargement, and outlet of State) y County, WV Tope, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and development, and outlet of state of the preliminary layout and development, and county, which is the project scope of work included e on-site exploration of subsurface of the preliminary layout and development, H&H analyses, and development of the phase 2, Pembina County,	s during the RCC trial- port services included Rehabilitation include w 85-foot riser intake works modifications. Section F #6 elopment of auxiliary s stablishing GPS contro conditions, laboratory d proportioning of var Section F #9	-mix batch d full-time ded slope e structure Fee: \$3M PROFESS spillway a ol, aerial r testing, n rious hydr	resident inspiration re, placement of (2) YEAR (2) YEAR (3) YEAR (4) YEAR (4) YEAR (5) YEAR (ement, and ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (if appl.) N/A erformed with current firm a new 90-foot-high eout of exploratory es, preliminary zoning es. Fee: >\$2M COMPLETED CONSTRUCTION (if appl.) 2014			
	zoned earthfill dam. Proproduction placement of reviews, RCC trial-mix based of a toe and chimney day of RCC for spillway armoderated to the s	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase supparted in the RCC. Construction-phase supparted in the RCC. Construction-phase supparted in the RCC. Construction of a new pring and enlargement, and outlet of State) The County, WV Tope, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and devent project scope of work included e on-site exploration of subsurface of fill embankment, H&H analyses, and a State) The County, WC and Specific ROLE (State) The County of the RCC of the RCC of the Phase 2, Pembina County, and State) The County of the RCC of th	s during the RCC trial- port services included Rehabilitation include w 85-foot riser intake works modifications. Section F #6 elopment of auxiliary s stablishing GPS contro conditions, laboratory d proportioning of val Section F #9 poort services for the re-	rmix batch difull-time ded slope e structur Fee: \$3M PROFESS spillway a ol, aerial r testing, r rious hydr PROFESS ehabilitati	resident inspiration replacement of stabilization replacement of (2) YEAR (2) YEAR (2) YEAR (3) YEAR (ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A erformed with current firm a new 90-foot-high eout of exploratory es, preliminary zoning es. Fee: >\$2M COMPLETED CONSTRUCTION (# appl.) 2014 erformed with current firm thigh, 2,100-foot-			
С.	zoned earthfill dam. Proproduction placement of reviews, RCC trial-mix based of a toe and chimney draw of RCC for spillway armound to the RCC for spillway armound to the River Site 16, Hardway and Lost River Site 16, Hardw	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase supported in the RCC. Construction-phase supported in the RCC. Construction-phase supported in the RCC. Construction of a new pring and enlargement, and outlet very state) The project scope of work included encycle on-site exploration of subsurface of the preliminary layout and development exploration of subsurface of the project scope of work included encycle on-site exploration of subsurface of the project scope of work included encycle exploration of subsurface of the project scope of work included encycle exploration of subsurface of the project scope of work included encycle exploration of subsurface of the project scope of work included encycle exploration of subsurface of the project scope of work included encycle	s during the RCC trial- port services included Rehabilitation include Rehabilitation include Rehabilitation include Rehabilitation include Rehabilitation include Rew 85-foot riser intake Works modifications. Section F #6 Relopment of auxiliary section grounditions, laboratory d proportioning of var Section F #9 Poort services for the relevices during the trial	rmix batch difull-time ded slope e structure Fee: \$3M PROFESS spillway a ol, aerial r testing, n rious hydr PROFESS	resident inspirate places resident inspirate placement of (2) YEAR (2) YEAR (2) YEAR (3) YEAR	ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A And a new 90-foot-high cout of exploratory es, preliminary zoning es. Fee: >\$2M COMPLETED CONSTRUCTION (# appl.) 2014 erformed with current firm of this in the cout of the c			
	zoned earthfill dam. Proproduction placement of reviews, RCC trial-mix base of a toe and chimney draw of RCC for spillway armoderate (1) TITLE AND LOCATION (City and Lost River Site 16, Hards (3) BRIEF DESCRIPTION (Brief scon NRCS. Project Engineer to zoned-earthfill dam. The drill holes and test pits, and design of the earthfill (1) TITLE AND LOCATION (City and Renwick Dam Rehabilit ND) (3) BRIEF DESCRIPTION (Brief scon NRCS. Project Manager long zoned earthfill dam RCC. Construction-phases	managing construction-phase supported resident engineering services of the RCC. Construction-phase supported atching and testing, and inspection ainage system, construction of a neuring and enlargement, and outlet of State) y County, WV Tope, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and develope project scope of work included e on-site exploration of subsurface of fill embankment, H&H analyses, and d State) eation Phase 2, Pembina County, Tope, size, cost, etc.) AND SPECIFIC ROLE managing construction-phase support. Provided resident engineering size support services include full-times and county and county services include full-times are support services include full-times.	s during the RCC trial- port services included Rehabilitation include Rethabilitation include Rethabilitatio	rnix batch d full-time ded slope e structure Fee: \$3M PROFESS spillway a ol, aerial r testing, n rious hydr PROFESS ehabilitati al placeme	resident inspector placement of the project placement of the placement of the project placement of the placement o	completed construction (if appl.) construction (if appl.) construction (if appl.) n a new 90-foot-high cout of exploratory es, preliminary zoning es. Fee: >\$2M completed construction (if appl.) 2014 erformed with current firm the high, 2,100-foot- ction placement of the and inspection of the			
С.	zoned earthfill dam. Proproduction placement or reviews, RCC trial-mix based of a toe and chimney draw of RCC for spillway armount of RCC for	managing construction-phase supported resident engineering service of the RCC. Construction-phase supported atching and testing, and inspection along system, construction of a neuring and enlargement, and outlet of State) y County, WV Topo, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and develope project scope of work included e on-site exploration of subsurface of fill embankment, H&H analyses, and d State) sation Phase 2, Pembina County, Topo, size, cost, etc.) AND SPECIFIC ROLE managing construction-phase support. Provided resident engineering states are support services include full-time ruction project. Rehabilitation mea	s during the RCC trial- port services included Rehabilitation include Rehabilitation include Rehabilitation include Rehabilitation include Rehabilitation include Rew 85-foot riser intake Works modifications. Section F #6 Plopment of auxiliary services during GPS control conditions, laboratory d proportioning of value Section F #9 Poort services for the re- pervices during the trial resident inspection, assures include a new elements.	rnix batch difull-time ded slope e structure Fee: \$3N PROFESS spillway a ol, aerial r testing, n rious hydr PROFESS ehabilitati al placeme , shop dragembankme	resident inspiration replacement of the placement of the	cetion, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A Provinced with current firm a new 90-foot-high eout of exploratory es, preliminary zoning es. Fee: >\$2M COMPLETED CONSTRUCTION (# appl.) 2014 erformed with current firm or high, 2,100-foot-ction placement of the and inspection of the the location of the			
С.	zoned earthfill dam. Proproduction placement or reviews, RCC trial-mix based of a toe and chimney draws of RCC for spillway armound to the RCC for spillway armound to the River Site 16, Hards Lost River Site 16, Hards Lost River Site 16, Hards (3) BRIEF DESCRIPTION (Brief sconned-earthfill dam. The drill holes and test pits, and design of the earthfill holes and test pits, and design of the earthfill (1) TITLE AND LOCATION (City and Renwick Dam Rehabilit ND) (3) BRIEF DESCRIPTION (Brief sconned Lost Project Manager long zoned earthfill dam RCC. Construction-phase all aspects of the constructional grass-lined auxiliary armound armound the regional grass-lined auxiliary armound the regional grass-lined au	managing construction-phase suppovided resident engineering service of the RCC. Construction-phase support atching and testing, and inspection already and enlargement, and outlet of State) Y County, WV Topo, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and development of subsurface of the exploration of t	s during the RCC trial- port services included Rehabilitation include Rehabilitation include Rehabilitation include Rehabilitation include Rehabilitation include Rehabilitation include Rew 85-foot riser intake Works modifications. Section F #6 Pelopment of auxiliary services duriliary services for the reservices during the trial Revices include a new eximately 19,000 cubic	rmix batch difull-time ded slope e structure Fee: \$3N PROFESS spillway a ol, aerial r testing, n rious hydr PROFESS ehabilitati al placeme shop dra- embankm- yards of a	resident inspiration replacement of the placement of the	ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A Provinced with current firm a new 90-foot-high eout of exploratory es, preliminary zoning es. Fee: >\$2M COMPLETED CONSTRUCTION (# appl.) 2014 erformed with current firm ot-high, 2,100-foot-ction placement of the and inspection of the the location of the RCC for a new stepped			
С.	zoned earthfill dam. Proproduction placement or reviews, RCC trial-mix based of a toe and chimney draws of RCC for spillway armound to the RCC for spillway armound to the River Site 16, Hards Lost River Site 16, Hards Lost River Site 16, Hards (3) BRIEF DESCRIPTION (Brief sconned-earthfill dam. The drill holes and test pits, and design of the earthfill holes and test pits, and design of the earthfill (1) TITLE AND LOCATION (City and Renwick Dam Rehabilit ND) (3) BRIEF DESCRIPTION (Brief sconned Lost Project Manager long zoned earthfill dam RCC. Construction-phase all aspects of the constructional grass-lined auxiliary armound armound the regional grass-lined auxiliary armound the regional grass-lined au	managing construction-phase supported resident engineering services of the RCC. Construction-phase supported atching and testing, and inspection ainage system, construction of a neuring and enlargement, and outlet of State) y County, WV Tope, size, cost, etc.) AND SPECIFIC ROLE for the preliminary layout and develope project scope of work included e on-site exploration of subsurface of fill embankment, H&H analyses, and d State) eation Phase 2, Pembina County, Tope, size, cost, etc.) AND SPECIFIC ROLE managing construction-phase support. Provided resident engineering size support services include full-times and county and county services include full-times are support services include full-times.	s during the RCC trial- port services included Rehabilitation include Rehabilitation include Rehabilitation include Rehabilitation include Rehabilitation include Rehabilitation include Rew 85-foot riser intake Works modifications. Section F #6 Pelopment of auxiliary services duriliary services for the reservices during the trial Revices include a new eximately 19,000 cubic	rmix batch difull-time ded slope e structure Fee: \$3N PROFESS spillway a ol, aerial r testing, n rious hydr PROFESS ehabilitati al placeme shop dra- embankm- yards of a	resident inspiration replacement of the placement of the	ection, shop drawing neasures, installation of 26,000 cubic yards COMPLETED CONSTRUCTION (# appl.) N/A Provinced with current firm a new 90-foot-high eout of exploratory es, preliminary zoning es. Fee: >\$2M COMPLETED CONSTRUCTION (# appl.) 2014 erformed with current firm ot-high, 2,100-foot-ction placement of the and inspection of the the location of the RCC for a new stepped			

	E. RESU	MES OF KEY PERSO	ONNEL PROPOSED I	FOR THIS CONTRACT			
	NAME Obert T. Saber, PE	13. ROLE IN THIS CON	TRACT		EXPERIENCE		
	•	Dam Kenabilita	tion Alternatives	29	b. WITH CURRENT FIRM		
15.	FIRM NAME AND LOCATION (City and State) Gannett Fleming, Harrisburg, PA						
16.	EDUCATION (DEGREE AND SPECIALIZATION)		17 CHEDENT DECESE	IONAL REGISTRATION (STATE A			
BS	/Civil Engineering		Project Engineer/	PA.TX. WV. VA	ND DISCIPLINE)		
<u>M</u>	S/Civil Engineering			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
16. Pr	OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations: Chi Epsilon	inizations, Training, Awards,	etc.)				
		19 RELEVA	NT PROJECTS				
	(1) TITLE AND LOCATION (City and State)		IN PROJECTS	(2) YEA	RICOMPLETED		
	Final Design and Construction-Phase Ser	vices for New	Carrier E #0	PROFESSIONAL SERVICES	(1-1)		
	Creek Site 14, Grant County, WV		Section F #2	2013	2013		
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	SPECIFIC ROLE		Check if project	performed with current firm		
	NRCS. Principal Geotechnical Engineer fo	r conceptual plann	ing-level studies th	rough a final design and	construction package		
a.	associated with the rehabilitation design spillway RCC armoring and flattening dov	vnstream slene wit	zoned earth embai	nkment dam. Rehabilit	ation includes auxiliary		
	subsurface investigation (21 test borings	and 8 test nits). nie	n uramage bianket	and toe drain installati	on. Services include		
	piezometers and data loggers); field fallin	ig-head permeabili	ty testing, geonhys	ical testing (spiemic rofe	vibrating-wire		
	potential), soils and rock laboratory testil	ng; design for slope	stability and seen:	age with the GEO_Studio	Stuitor and design		
	Laiculations for settlement, fifters, and dr	ains. Prepared cor	istruction plans, co	st estimates, constructi	an enacifications		
	and instructions to the enginee	r. Controlled draw	down of the reserv	oir to permit construct	ion in the dry was		
	completed through monitoring instrumer (1) TITLE AND LOCATION (City and State)	ntation. Fee: \$3M					
	Design of Elkwater Fork Dam, Randolph	County WV		(2) YEAR PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)		
	See a	County, ww	Section F #7	2011	2011		
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	PECIFIC ROLE		Chack if project	performed with current firm		
b.	NRCS. Senior Geotechnical Project Manag	er for overall coor	dination and mana	gement of investigation	s and decign of a 120		
	Tool-High, 700-foot-long RCC gravity dam.	. Services included	ground surveys an	d aerial manning of the	dam and reconstit		
	f area; subsurface exploration and testing (of soil and rock mat	terials: foundation	design: spicmic hazard:	secondonta bandual a sta		
	and hydraulic analyses; preliminary design estimate; and preparation of construction	n and layout; final (design: preparation	of plans, specifications	, and construction cost		
	(1) TITLE AND LOCATION (City and State)	rschedule. Fee: \$1.	.5IVI	(0) VE 5.0	COMPLETED		
	Final Design and Construction-Phase Serv	vices for Lost		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)		
	River Site 16, Hardy County WV		Section F #6	2015	N/A		
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SI	PECIFIC ROLE		Check if project	erformed with current firm		
	NRCS. Senior Geotechnical Project Manag	er for the manager	ment of investigation	ons and design of this n	W 80-foot-bigh zoned		
	cartrilli dam. Services included subsurtat	e exploration and i	testing of soil and r	nck materials: final doc	on proparation of		
	plans, specifications, and construction cos	st estimate (PS&E);	and preparation of	construction schedule	Fee: >\$2M		
	Hibernia Dam Safety Assessment, Cheste	r County, PA		PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)		
			Section F #8	Ongoing 2016	N/a		
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE COLARA Principal Control of the scope of the scop						
d.	CCWRA. Principal Geotechnical Engineer r	esponsible for eval	uation of piezomet	ric readings for a 64-for	t-high 700-foot long		
	earth embankment dam designed and cor	istructed in 1994 b	y the Natural Reso	urces Conservation Serv	rice. Monthly		
	piezometric readings indicated elevated p	nreatic surrace with	nin the downstrear	n dam embankment, w	hich led to temporary		
	reservoir drawdown, additional subsurfact diagnosis cause of elevated pore pressure	e ilivestigation, pie s and assess downs	zometer installatio	n, and laboratory testin	g of collected soils to		
	(IT THE EARD COCATION (City and State)		stream slope stabili		COMPLETED		
	NRCS Dam Assessments, WV, NH, WI, and	d ND		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)		
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SP	ECIEIC DOLE		2010	N/A		
1	NRCS. Principal Geotechnical Engineer res	ponsible for assessi	ng the gentechnics	Check if project p	erformed with current firm		
8	reports for 82 NRCS dams located in West	Virginia, New Ham	pshire. Wisconsin	and North Dakota The	chiactive of the		
	assessments was to determine if the dams	Complied with cur	rent NRCS and Stat	e decian standards Cit	O Minite and residence of		
	an available suBilisettill data Mete fized fo	assess the dams.	Each dam required	an NRCS Water Recou	cor CITEC computer		
	alialysis for the emergency spillway and ar	i evaluation of exis	ting seepage contri	ol elements. The assess	ments identified and		
	provided preliminary cost estimates for high	gh-priority rehabilit	ation projects. Fee	: \$1.8M			

	E. RES	SUMES OF KEY PERSONNE (Complete one Section E	L PROPOSED	FOR THIS CONTRACT	
12. NA Tim o	ME othy W. Johnston, PE	13. ROLE IN THIS CONTRACT Dam Rehabilitation		a. TOTAL 39	b. WITH CURRENT FIRM 39
<u> 6</u>	M NAME AND LOCATION (City and State) Carmett Fleming, Harrisburg, PA		NUDDENT SOCKE	SIONAL REGISTRATION (STATE A	ND DISCIPLINE)
gc/c	UCATION (DEGREE AND SPECIALIZATION) LIVI Engineering HER PROFESSIONAL QUALIFICATIONS (Publications, C	Pro	fessional Eng		
Prof	essional Organizations: American Con	crete Institute; ASDSO	ROJECTS	10	
T	(1) TITLE AND LOCATION (Cky and State) Elkwater Fork Water Supply Dam, Ra	ndolph County, WV,	Section F #7	PROFESSIONAL SERVICE 2011	CONSTRUCTION (* app.) 2011
а.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A NRCS. Design Engineer assisting with 1 gravity dam. Services included ground testing of soil and rock materials, hyd final design, preparation of plans and	the management of invest d surveys and aerial mapp rologic and hydraulic anal	ing of the dan vses, prelimin	design of this 130-foot- n and reservoir area, su ary design and layout o	f the stepped spillway,
	New Creek Dam Site 14 Rehabilitatio	on, Grant County,	Section F #2	PROFESSIONAL SERVICE 2013	ES CONSTRUCTION (# appl.) 2013
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) P NRCS. Project Manager for technical (100-foot-high, 940-foot-long zoned e	quality assurance review o	f contract pla	ns and specifications fo	AR COMPLETED
	Dam Assessments, Dam Design, Dam Management, Floodplain Restoratio Nationwide	n Design Reviews, Constru n Design, and Legal Land	ction Surveys,	PROFESSIONAL SERVIC 2011	N/A
¢	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) NRCS. Project Coordinator for a multi as a preferred provider to NRCS for d restoration design, and legal land sur inspection, review of operation and r deficiencies, the NRCS SITES integrity alternatives and cost estimates, and modeling and dam break analyses an failure. Inundation mapping was pre Centers Servicing Unit on 90 percent Renwick Dam in Pembina County, No compiled multidiscipline engineering preparation of, compliance with, and engineering and surveying supports	iyear nationwide Indefinition assessments, dam destrey services for projects longing analysis of auxiliary spilly preparation of risk assessing prepared for more than 100 design documents prepared for the bakota, which is a mug reviews of civil features and reporting related to an a	ign, design re ocated in WV, nydrologic and vays, preparat ment and prio apping that de dams. Performed by NRCS, I ltipurpose eal and RCC drawl pproved Smal	lefinite Quantity Contraviews, construction mawiful, ME, NH, ND, and Nalyses, identification of cion of recommended drity-ranking spreadsheed picted areas of flood rimed design peer review North Dakota for proporthfill embankment danings and specifications. I Business Subcontractifies: \$1.8M	M. Performed site dam and spillway capacit am rehabilitation ets. Perofrmed hydraulic sk in the event of a dam is for Fort Worth National sed rehabilitation of h. Coordinated and Responsible for
	(1) TURE AND LOCATION (Oily and Sinital Thorn Run Dam Rehabilitation, Tow	nship of Oakland, Butler	County, PA	PROFESSIONAL SERVICE 2012	CONSTRUCTION (if appl.) 2012
d	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) Pennsylvania America Water. Project high, 600-foot-long zoned earthfill e overtopping protection, and installa	t Manager for quality assumbankment dam, includin	ig spillway rec	of contract plans and s construction, embankme trumentation. Fee: \$1.3	ent armoring with Recitor
	(1) TITLE AND LOCATION (On and State) Redbank Valley Intake Dam Rehabi PA	litation, Armstrong and C	arion Countie	PROFESSIONAL SERVI	CES CONSTRUCTION (Fappl.) 2007
e.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, efc., Redbank Valley Municipal Authority Denil-type fish passage facility to reincluded quality assurance/quality cimpact of the dam rehabilitation an profiles of the Redbank Creek. Fee:	. Project Manager for the place the existing dam and control review of contract d proposed pump station.	l eliminate ha drawings. Th	w concrete gravity dam zardous hydraulic back e project also included l	wash. Responsibilities 1&H analyses to assess the

	E. RES	UMES OF KEY PERSO	NNEL PROPOSED	FOR THIS CONTRACT	
12.	NAME	(Complete one Sec	tion E for each key p		
	illiam J. Franz, PE, PG		tion Alternatives	a. TOTAL	XPERIENCE b. WITH CURRENT FIRM
		Dam Kenabilitai	ion Aiternatives	35	21
15.	FIRM NAME AND LOCATION (City and State)				_ 21
	Gannett Fleming, Harrisburg, PA				
	EDUCATION (DEGREE AND SPECIALIZATION)		17. CURRENT PROFESS	IONAL REGISTRATION (STATE AND	DISCIPLINE)
	/Geology		Professional Engi	neer/PA, VA	ŕ
BS	ET/Water Resources Engineering Techno	logy	DC/DA	•	
18.	OTHER PROFESSIONAL QUALIFICATIONS (Publications, O	rganizations, Training, Awards,	etc.)		
Pre	ofessional Organizations: ASTM Internat	ional; ASDSO			
_	(1) TITLE AND LOCATION (City and State)	19 RELEVA	NT PROJECTS		
				(2) YEAR (OMPLETED
	Renwick Dam, Pembina County, ND		Section F #9	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
			26CHOH F #9	2012	2014
a.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AN	D SPECIFIC ROLE		Check if project ne	erformed with current firm
a.	NRCS. Senior Geotechnical Engineer res	sponsible for reviewi	ng the geotechnica	I design elements of a rel	abilitation project for
	the existing 40-foot-high dam. The dar	n has a 145-square-n	nile drainage area :	and was constructed in 10	161 for flood control
	and recreation purposes. The rehabilit	ation project increase	es the height of th	dam by about E fact on	1011100-00111101
	construction of a 500-foot-wide RCC sp	illway within the con	tral portion of the	conhankment See \$456	includes the
	(1) TITLE AND LOCATION (City and State)	mway within the ten	trai portion or the	embankment, Fee: \$466k	ALIGN CTTO
	Salem Fork Dam, WV			PROFESSIONAL SERVICES	OMPLETED CONSTRUCTION (if appl.)
			Section F #10	2014	N/A
b.	(2) PRIES DEPORTED (C)				
IJ.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) ANI	O SPECIFIC ROLE		Check if project pe	aformed with current firm
	NRCS. Senior Geotechnical Engineer res	sponsible for assessir	ng the geotechnica	elements for a 40-foot-h	igh flood-control
	dam. A review of the original design re	port and as-built plai	ns were used to as	sess the dam and provide	preliminary cost
	estimates for several remedial alternati	ves. Fee: \$200K		•	
	(1) TITLE AND LOCATION (City and State)			(2) YEAR C	OMPLETED
	Forty-one Dam Assessments, Various L	ocations, WV		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	(0) PDIES PROPERTY		<u>.</u>	2011	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPECIFIC ROLE		Check if project pe	rformed with current firm
C.	NRCS. Senior Geotechnical Engineer res	ponsible for assessin	g the geotechnical	elements of 41 flood-cor	itrol dams located in
	TT counties in northern and central We	st Virginia. Site visits	and reviews of th	e original design reports a	nd as-built plans
	were used to assess the dams. Each da	m required a SITES a	nalysis for the auxi	liary spillway and an evalu	lation of existing
	seepage-control elements. The assessn	nents identified and i	provided prelimina	ry cost estimates for high	-priority
	renabilitation projects. Fee: \$750k	•		, and an indication in ingi	priority
	(1) TITLE AND LOCATION (City and State)			(2) YEAR C	OMPLETED
ŀ	Dam Assessments, Western WI			PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
		<u></u>		2012	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPECIFIC ROLE		Check if project pe	formed with a want fee
. [NRCS. Senior Geotechnical Engineer res	ponsible for assessin	g the geotechnical	elements of three flood-	control dams. The
d.	objective of the assessments was to det	ermine if the dams o	omplied with curre	ent NRCS and state design	standards Site
	visits and reviews of the available engin	eering data were use	ch and seese at he	ms. Each dam required a	SITEC analysis for the
	emergency spillway and an evaluation of	f evicting coonses co	entrol claments on	dali required a	Siles analysis for the
- 1	the abutment bedrock. The assessment	s identified and muni-	antior elements an	u the severity of stress-re	lief jointing within
- 1	the abutment bedrock. The assessment projects. Fee: \$287K	s identified and prov	idea preliminary c	ost estimates for high-pri	ority rehabilitation
	(1) TITLE AND LOCATION (City and State)				
	Dam Assessments, Walsh County, ND			(2) YEAR CO	
	Dam Assessments, waish County, ND			PROFESSIONAL SERVICES 2012	CONSTRUCTION (if appl.)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPECIFIC POLE			N/A_
	NRCS. Senior Geotechnical Engineer resi	on cointo Role	the gestackated		formed with current firm
e.	NRCS. Senior Geotechnical Engineer responses to dot	ormine (OL 922622)[J	s me Reofecunical	elements of five flood-co	ntrol dams. The
	objective of the assessments was to det	ermine ir the dams c	omplied with curre	nt NRCS and state design	standards. Site
	visits and reviews of all available engine	ering data were used	to assess the dam	Each dam required a S	ITES analysis for the
	emergency spiliway and an evaluation of	f existing seepage-co	ntrol elements. Th	ne assessments identified	and provided
	preliminary cost estimates for high-prior	ity rehabilitation or o	jects Eco: \$100K		

PER.	Z 1.11 735 168 P. A. E. RESU	(Complete one Section	on E for each key p	FOR THIS CONTRACT erson.)	
12. NA	anda J. Hess, PE, CFM	13, ROLE IN THIS CONTE Hydraulics and H	ACT	a. TOTAL 16	ARS EXPERIENCE b. WITH CURRENT FIRM 15
1.00	RM NAME AND LOCATION (City and State)				
16. ET	DUCATION (DEGREE AND SPECIALIZATION) Civil Engineering		Professional Eng	SIONAL REGISTRATION (STATION (STATION)	
18. O	Civil Engineering THER PROFESSIONAL QUALIFICATIONS (Publications, Orgi Fessional Organizations: American Societ Ional Engineering Honor Society; Virginia	v of Civil Engineers:	a.) ASDSO; Chi Epsil	Floodplain Manager on Civil Engineering H JSSD, Member, Comm	lonor Society; Tau Beta Pi
IVal		19 RELEVAN	IT PROJECTS		YEAR COMPLETED
1	(1) TITLE AND LOCATION (City and State) Indefinite Delivery/Indefinite Quantity Upper Deckers Creek Site 1 Safe-Yield S County, WV		eering Services, Section F #1	PROFESSIONAL SERV Ongoing (201	VICES CONSTRUCTION (# appl.) 6) N/A
а.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND NRCS. Senior Project Engineer responsible a computer model and a hydrologic data streamflow record from approximately based on computer model simulation at Guidelines. Prepared drawdown statist	ole for assessing safe abase to simulate th 1910 to 2011. Safe y nd on requirements	e daily operatior /ield for a range in compliance w	Deckers Creek Site 1. In of the reservoir for the of the reservoir for the of the first the the West Virginia Interpretable, and a summary reserved.	the period of transposed onditions was investigated Division of Health eport. Fee: \$999K (est.)
	(1) TITLE AND LOCATION (City and State) Reservoir Fluctuation Study, Chester Co		Section F#	PROFESSIONAL SER) TEAR CONFECTED
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND CCWRA. Senior Project Engineer respon Hibernia Dam). Work included develop reservoir for the period of transposed s based on computer model simulation a water to a downstream intake. Results	isible for assessing the ing a computer mode treamflow record front and was used to design	el and hydrologi om 1912 to 2010 gn improvement	fluctuations of Cham c database to simulat d. Minimum reservoir s to the outlet works	pool level was investigated
	(1) TITLE AND LOCATION (City and State)			PROFESSIONAL SEF	2) YEAR COMPLETED RVICES CONSTRUCTION (if appl.)
	White Tanks Flood-Retarding Structure Maricopa County, AZ	e (FRS) No. 4,	Section F #	2009	N/A
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND Flood Control District of Maricopa Countrehabilitation of White Tanks FRS No. 4 which involved developing alternatives dam to meet current criteria, as well as analyses using the HEC-RAS computer of during extreme events for the alternation.	nty. Project Engineer The project including, including no action developing a nation model for the reach	ed preparing an , decommissioni nal economic dev downstream of t	an NRCS planning-pha NRCS work plan/envious ng/removing the dam relopment alternative he dam to estimate f	n, and/or rehabilitating the c. Completed unsteady-flow
	(i) TITLE AND LOCATION (City and State) Elkwater Fork Safe-Yield and Reservoil Randolph County, WV	r-Sizing Study,	Section F #	PROFESSIONAL SE	RVICES CONSTRUCTION (# appl.) 2011
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AN NRCS. Project Engineer responsible for responsible for completing analyses reddam. Fee: \$1.5M	assessing the safe v	ield and sizing of n of water durin	the proposed Elkwat g construction. The n	iew structure is a RCC gravity
	(1) TITLE AND LOCATION (City and State)	16 Hardy County		PROFESSIONAL SE	
	Lost River Watershed Dams, Site No. 2 WV (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AN		Section F		N/A If project performed with current firm
e.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AN NRCS. Project Engineer responsible for environmental impact statement and of the NRCS SITES computer model, which and breaching. Performed dam break included preparing dam break inundated.	completing H&H pland designing a new 90-f h was also used to e analyses using HEC-	oot-high zoned (valuate the prop RAS and HEC-Ge	lies and investigations earthfill dam. Comple osed spillway's susce	s to support an eted hydrologic analyses using ptibility to erosion damage

	E. RESU	MES OF KEY PERSO	ONNEL PROPOSED F	OR THIS CONTRACT	
	NAME enjamin P. Israel-Devadason, PE, CFM	13. ROLE IN THIS CON' Hydraulics and I	TRACT	a. TOTAL	EXPERIENCE b. WITH CURRENT FIRM
15.	FIRM NAME AND LOCATION (City and State) Francett Fleming, Harrisburg, PA	<u></u>		10	7
16. BS M	EDUCATION (DEGREE AND SPECIALIZATION) 6/Civil Engineering S/Civil Engineering		Professional Engin	DNAL REGISTRATION (STATE AF	NO DISCIPLINE)
18.	OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organications) of the professional Organizations: ASFPM; ASCE; And the professional Organizations of the professional Organization of the Organizat	nerican Water Reso	etc.) Durces Association; (Chi Epsilon Civil Engine	ering Honor Society
_	(1) TITLE AND LOCATION (City and State)	19 RELEVA	NT PROJECTS		
	Upper Deckers Site 1 Dam, Preston Cour	nty, WV,	Section F #1	PROFESSIONAL SERVICES Ongoing (2016)	COMPLETED CONSTRUCTION (# appl.) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	PECIFIC ROLE		Check if project	performed with current firm
a. 	NRCS. H&H Engineer conducting a detailed analyses of Upper Deckers Site 1 Dam and SITES H&H models; performed site visit; of hydraulic model using HEC-GeoRAS, HEC-during sunny day and hydrologic loading of reservoir for those scenarios. Fee: \$999K	d its floodplain. Re completed an appro- RAS, and ArcGIS so conditions to predi	viewed existing H&I oximate survey of ch oftware. Ran the dan	H data; collected topo៖ nannel obstructions; ar n breach model to sim	graphic data; developed and developed a detailed
	(1) TITLE AND LOCATION (City and State)				COMPLETED
	Lost River Site No. 16 Dam, Hardy Count		Section F #6	PROFESSIONAL SERVICES 2015	CONSTRUCTION (if appl.) N/A
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SI NRCS. H&H Designer conducting a detaile H&H data; collected topographic data; an The model was used to simulate dam brea extents and water surface elevations of or including bridge structures within HEC-RA	d dam break hydra d developed a deta ak scenarios, includ utflow from the rea	ailed hydraulic mode ding sunny day failu servoir for those sce	River and its floodplain el using HEC-GeoRAS, H re and PMF failure, and enarios Modeled teme	HEC-RAS, and ArcView.
	(1) THE LATE EGONTION (Oily and State)			(2) YEAR	COMPLETED
	New Creek Site No. 14 Dam, Grant Count		Section F #2	PROFESSIONAL SERVICES 2013	CONSTRUCTION (if appl.) 2013
c.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SF NRCS. H&H Engineer conducting a detailed hydraulic analysis of New Creek and its flot H&H models, performed site visit, comple hydraulic model using HEC-GeoRAS, HEC-fhydrologic loading conditions to predict flot) TITLE AND LOCATION (City and State)	d hydrologic study, podplain. Reviewed rted an approximat RAS, and ArcGIS. Ra	existing H&H data, e survey of channel an model to simulate	ntegrity analyses, and collected topographic obstructions, and device dam failure during se	data, developed SITES eloped detailed
	Salem Fork Site 11 and Site 11A Dam, Har	rrison County,	Section F #10	PROFESSIONAL SERVICES 2014	COMPLETED CONSTRUCTION (if appl.) N/A
ď.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SP NRCS. H&H Engineer conducting a detailed analyses of the dams and their floodplain. performed site visit; completed an approxiusing HEC-GeoRAS, HEC-RAS, and ArcGIS. I loading conditions to prodict the flood and	d hydrologic study, Reviewed H&H da imate survey of cha Ran dam breach ma	ta; collected topogra annel obstructions; a odel to simulate fail	tegrity analyses, and daphic data; developed and developed a detai.	SITES H&H models; led hydraulic model
-	loading conditions to predict the flood extension (1) TITLE AND LOCATION (City and State)	ents and water sur	face elevations of o	utflow from the reserv	oir. Fee: \$200K
	Dam Assessments, Breach Modeling, and Located in WV, WI, NH, ND, and NM		ng for 112 Dams	PROFESSIONAL SERVICES 2012	COMPLETED CONSTRUCTION (if appl.) N/A
е.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPE NRCS. H&H Engineer developing dam failur Google Earth software; and performing dar lengths from 2 miles to 66 miles. The dam of downstream impact areas; preparing by the sufficiency of the existing dams to conf failure indexes; and developing and evalua	re models; preparii m assessments. Th assessment tasks ii drologic and auxilii form to current des	e dam breach unste ncluded performing ary spillway models sign and analysis crit	ing using HEC-GeoRAS ady-state hydraulic mo dam inspections; cond using the NRCS SITES parteria; identifying deficit	odels range in reach lucting reconnaissance

12. NA Greg	geron genegogen i delvegogen E. RESI	13. ROLE IN THIS COI	ction E for each key	1 _	14, YEARS EXP	ERIENCE
	ory L. Richards, PE, CFM	Hydraulics and	Hydrology	a, TOT	AL	b. WITH CURRENT FIRM 5
	M NAME AND LOCATION (City and State)			120		
	CATION (DEGREE AND SPECIALIZATION)	<u> </u>	17 CURRENT PROFI	ESSIONAL RI	GISTRATION (STATE AND D	SCIPLINE)
	Civil Engineering		Professional/U	JT		
/S/	Civil and Environmental Engineering		ASFPM Certifie	ed Floodp	lain Manager	
a 01	HER PROFESSIONAL QUALIFICATIONS (Publications, O.	rganizations, Training, Award	s, etc.)	ommittae		
rof	essional Organizations: ASFPM; USSD;	ASDSO, Dam Fallur	ANT PROJECTS	Ommutee		
	(1) TITLE AND LOCATION (City and State)	19 KELLY	ANTINODESTO		(2) YEAR CO	MPLETED
	New Creek Site No. 14 Dam Break Ana	lysis and	Section F		ROFESSIONAL SERVICES 2013	CONSTRUCTION (if appl.) 2013
- 1	Inundation Mapping, Grant County, W		Section F	#2		
t		D SDECIESC BOI E			Check if project per	formed with current firm
a. !	MRCC Hydraulic and Hydrologic Design	er conducting a de	tailed dam break	hydraulic	analysis of New Cre	ek and its noodplain.
	Povioused existing H&H data: collected	topographic data:	performed a site :	visit; com	ipieted an approxima	ate survey of chaline
1	obstructions, including 22 bridges, and	i developed a detail	ed hydraulic mod	del using I	HEC-Geokas, HEC-KA	S, and Arcois
	software Model was run to simulate f	failure of dam durin	g both sunny day	y and hyd	tologic loading condi	tions to predict the
	flood extents and water surface elevat	ions of outflow from	n the reservoir fo	or those s	(2) YEAR CO	OMPLETED
	(1) TITLE AND LOCATION (City and State)	ion Drocton		P	ROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
I	Upper Deckers Site 1 Dam Rehabilitat	ion, Preston	Section F	#1	Ongoing (2016)	N/A
}	County, WV	in consulting Box 5			Check if project per	formed with current firm
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AN NRCS. Hydraulic and Hydrologic Engine	nd specific Roll: per for the prelimin	ary and final reha	abilitation	design of a 45-foot-	high, 600 LF, high-
o.	hazard zoned earth embankment dam	constructed in 196	9 This project is	a contin	uation of the plannin	g study completed in
-	2011. Rehabilitation included a new s	tair-stenned RCC sr	illway armoring o	detail on	the existing embankr	nent, replacement o
	the ricer structure, slone flattening, in	ternal drainage elei	ments, and emba	inkment d	onstruction in the ex	dsting auxiliary
j	spillway. Directly responsible for com	pletion and technic	al review of hydra	aulic prop	ortioning and auxilia	ary spillway analysis
	for the rehabilitation project. Fee: \$99	99K (est.)	,			
	(1) TITLE AND LOCATION (City and State)	3311 (4351)				OMPLETED CONSTRUCTION (if appl.)
	NRCS Dam Assessments, WV			1	ROFESSIONAL SERVICES 2011	N/A
		AID SDECIE'S BOLE	<u> </u>			rformed with current firm
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AI NRCS. Hydraulic and Hydrologic Design	mer preparing dam	assessment repo	orts for 66	NRCS dams and dan	n failure inundation
C.	manning reports for 34 additional NRC	CS dams located in	West Virginia. W	ork inclu	ded bertorming dam	inspections,
	conducting reconnaissance of downst	ream impact areas:	performing dam	ı failure m	iodeling using HEC-K	AS; preparing
	inundation manning: completing hydr	aulic, hydrologic, ai	nd auxiliary spillw	vay analy:	ses using Siles; ident	if the deficiencies
	and developing rehabilitation alternat				4	mying denciencies,
	i and developing renabilitation afferna	tives and planning-l	evel cost estimati	ions. Fee	: \$1.8IVI	IIIyilig delicielicies,
_	(1) TITLE AND LOCATION (City and State)	tives and planning-l	evel cost estimat	ions. Fee	: \$1.8IVI (2) YEAR (COMPLETED
	(1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation, Luze	tives and planning-I	evel cost estimati	ions. Fee	(2) YEAR (PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.,
_	(1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation, Luze	erne County, PA	evel cost estimati	ions. Fee	(2) YEAR (PROFESSIONAL SERVICES Ongoing (2016)	COMPLETED CONSTRUCTION (# appl. N/A
	Pikes Creek Dam Rehabilitation, Luze	erne County, PA	evel cost estimati	ions. Fee	: \$1.8M (2) YEAR (PROFESSIONAL SERVICES Ongoing (2016) Check if project pt	COMPLETED CONSTRUCTION (if appl. N/A arformed with ourrent frm
	Pikes Creek Dam Rehabilitation, Luze (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Represelvance American Water Project	erne County, PA ND SPECIFIC ROLE t Manager for com	evel cost estimati	inary desi	: \$1.8M (2) YEAR (PROFESSIONAL SERVICES Ongoing (2016) Check if project pages gn-phase services for	COMPLETED CONSTRUCTION (if appl. N/A erformed with current firm a high-hazard 65-
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project	erne County, PA ND SPECIFIC ROLE t Manager for com-	evel cost estimate	inary desi	: \$1.8M (2) YEAR (PROFESSIONAL SERVICES Ongoing (2016) Check if project pi gn-phase services for agineering studies an	COMPLETED CONSTRUCTION (if appl. N/A erformed with current firm r a high-hazard 65- d construction plans
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with s	erne County, PA ND SPECIFIC ROLE t Manager for comi us earthfill dam wit subsurface explorat at dam safety design	oletion of prelimite to a concrete core ions, site reconna	inary desi e wall. Er aissance, ative desi	(2) YEAR (2) YEAR (3) YEAR (3) YEAR (4) YEAR (5) YEAR (5) YEAR (6)	COMPLETED CONSTRUCTION (if appl. N/A enformed with ourrent from r a high-hazard 65- d construction plans assess the dam's eveloped and
d.	(1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation, Luze (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with secondition and compliance with current	erne County, PA ND SPECIFIC ROLE It Manager for compuse earthfill dam with subsurface explorate that dam safety designantives were per	oletion of prelimit th a concrete core ions, site reconna n criteria. Alterna formed to identif	inary desi e wall. Er aissance, ative desi	(2) YEAR (2) YEAR (3) YEAR (3) YEAR (4) YEAR (5) YEAR (5) YEAR (6)	COMPLETED CONSTRUCTION (if appl. N/A enformed with current from a high-hazard 65- d construction plans assess the dam's eveloped and at risk. Alternative
d.	(1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation, Luze (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with secondition and compliance with current	erne County, PA ND SPECIFIC ROLE It Manager for compuse earthfill dam with subsurface explorate that dam safety designantives were per	oletion of prelimit th a concrete core ions, site reconna n criteria. Alterna formed to identif	inary desi e wall. Er aissance, ative desi	(2) YEAR (2) YEAR (3) YEAR (3) YEAR (4) YEAR (5) YEAR (5) YEAR (6)	COMPLETED CONSTRUCTION (if appl. N/A enformed with current from a high-hazard 65- d construction plans assess the dam's eveloped and at risk. Alternative
d.	(1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation, Luze (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with s condition and compliance with currer critiqued. Two-dimensional hydraulic	erne County, PA ND SPECIFIC ROLE t Manager for coming us earthfill dam with subsurface explorate that dam safety designant and safety analyses were performent armoring and	oletion of preliming the a concrete core ions, site reconnant oriteria. Alternation of the application of th	inary desi e wall. Er alssance, ative desi fy downst	(2) YEAR (2) YEAR (3) YEAR (4) YEAR (5) YEAR (5) YEAR (6)	COMPLETED CONSTRUCTION (if appl. N/A erformed with current firm r a high-hazard 65- d construction plans assess the dam's eveloped and at risk. Alternative
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with scondition and compliance with currer critiqued. Two-dimensional hydraulic solutions evaluated included embank Final rehabilitation design includes experience of the complex conditions are conditioned as a complex condition and complex conditions evaluated included embank final rehabilitation design includes experienced.	erne County, PA ND SPECIFIC ROLE t Manager for coming and the subsurface explorate that dam safety designant armoring and the subsurface explorate that can armoring and the subsurface when the subsurface armoring and the subsurface when the subsurface when the subsurface armoring and the subsurface armoring armo	evel cost estimated by the concrete core ions, site reconnated corrections of the corrections of the correction of the application of the corrections of the correcti	inary desi e wall. Er aissance, ative desi fy downst of crest gi nd install new drain	(2) YEAR (PROFESSIONAL SERVICES Ongoing (2016) Check if project programming studies and field surveys to a gen solutions were decream infrastructure attes, fuse gates, and ing HydroPlus fuse gates and rege facilities, and reger facilities.	completed construction (# appl. N/A stormed with current frm r a high-hazard 65- d construction plans assess the dam's eveloped and at risk. Alternative labyrinth spillways. ates to increase trofitting existing
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with scondition and compliance with currer critiqued. Two-dimensional hydraulic solutions evaluated included embank Final rehabilitation design includes experience of the complex conditions are conditioned as a complex condition and complex conditions evaluated included embank final rehabilitation design includes experienced.	erne County, PA ND SPECIFIC ROLE t Manager for coming and the subsurface explorate that dam safety designant armoring and the subsurface explorate that can armoring and the subsurface when the subsurface armoring and the subsurface when the subsurface when the subsurface armoring and the subsurface armoring armo	evel cost estimated by the concrete core ions, site reconnated corrections of the corrections of the correction of the application of the corrections of the correcti	inary desi e wall. Er aissance, ative desi fy downst of crest gi nd install new drain	2) YEAR COPROFESSIONAL SERVICES Ongoing (2016) Check if project programming studies and field surveys to a general infrastructure attest, fuse gates, and ing HydroPlus fuse gange facilities, and resupstream closure. Fi	completed construction (if appl., N/A aformed with current firm r a high-hazard 65- d construction plans assess the dam's eveloped and at risk. Alternative labyrinth spillways. ates to increase trofitting existing ee: \$1.85M (est.)
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with scondition and compliance with currer critiqued. Two-dimensional hydraulic solutions evaluated included embank	erne County, PA ND SPECIFIC ROLE t Manager for coming and the subsurface explorate that dam safety designant armoring and the subsurface explorate that can armoring and the subsurface when the subsurface armoring and the subsurface when the subsurface when the subsurface armoring and the subsurface armoring armo	evel cost estimated by the concrete core ions, site reconnated corrections of the corrections of the correction of the application of the corrections of the correcti	inary desi e wall. Er aissance, ative desi fy downst of crest gi nd install new drain means of	(2) YEAR (D) PROFESSIONAL SERVICES Ongoing (2016) Check if project programmer of the project proj	COMPLETED CONSTRUCTION (if appl. N/A arformed with current from r a high-hazard 65- d construction plans assess the dam's eveloped and at risk. Alternative labyrinth spillways. ates to increase trofitting existing ee: \$1.85M (est.)
d.	Pikes Creek Dam Rehabilitation, Luze (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with s condition and compliance with currer critiqued. Two-dimensional hydraulic solutions evaluated included embank Final rehabilitation design includes ex discharge capacity, flattening downst outlet works with pneumatically-opes	erne County, PA ND SPECIFIC ROLE It Manager for com- us earthfill dam wit subsurface explorat nt dam safety desig c analyses were per ment armoring and ream embankment rated knife gate val	evel cost estimated by the concrete core ions, site reconnated corrections of the corrections of the correction of the application of the corrections of the correcti	inary desi e wall. Er aissance, ative desi fy downst of crest gi nd install new drain means of	(2) YEAR (D) PROFESSIONAL SERVICES Ongoing (2016) Check if project programmer of the project proje	completed construction (# appl. N/A stormed with current frm r a high-hazard 65- d construction plans assess the dam's eveloped and at risk. Alternative labyrinth spillways. ates to increase trofitting existing ee: \$1.85M (est.)
d.	Pikes Creek Dam Rehabilitation, Luze (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with s condition and compliance with currer critiqued. Two-dimensional hydraulic solutions evaluated included embank Final rehabilitation design includes ex discharge capacity, flattening downst outlet works with pneumatically-opes (1) TITLE AND LOCATION (City and State) Six Dam Assessments, Statewide Ma	erne County, PA ND SPECIFIC ROLE It Manager for com- us earthfill dam wit subsurface explorat nt dam safety desig c analyses were per ment armoring and ream embankment rated knife gate val	evel cost estimated by the concrete core ions, site reconnated corrections of the corrections of the correction of the application of the corrections of the correcti	inary desi e wall. Er aissance, ative desi fy downst of crest gi nd install new drain means of	2) YEAR COPROFESSIONAL SERVICES Ongoing (2016) Check if project programming studies and field surveys to a general infrastructure attest, fuse gates, and fing HydroPlus fuse gates, and resuperseam closure. From the professional services Ongoing (2015)	construction (# appl., N/A arormed with current firm in a high-hazard 65-d construction plans assess the dam's eveloped and at risk. Alternative alabyrinth spillways. The area to increase throfitting existing ee: \$1.85M (est.) COMPLETED CONSTRUCTION (# appl., N/A
	Pikes Creek Dam Rehabilitation, Luze (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with s condition and compliance with currer critiqued. Two-dimensional hydraulic solutions evaluated included embank Final rehabilitation design includes ex discharge capacity, flattening downst outlet works with pneumatically-open (1) TITLE AND LOCATION (City and State) Six Dam Assessments, Statewide Ma	erne County, PA ND SPECIFIC ROLE t Manager for coming and the safety design analyses were perment armoring and the safety design analyses were perment armoring and the safety design analyses were perment armoring and the safety design and th	evel cost estimated by the concrete core ions, site reconnated control of the control of the application of	inary desi e wall. Er aissance, ative desi fy downst of crest g nd install new drair means of	(2) YEAR (PROFESSIONAL SERVICES Ongoing (2016) Check if project programmer of the project property of the project property of the project property of the project property of the project	COMPLETED CONSTRUCTION (if appl. N/A enormed with current firm r a high-hazard 65- d construction plans assess the dam's eveloped and at risk. Alternative labyrinth spillways. ates to increase trofitting existing ee: \$1.85M (est.) COMPLETED CONSTRUCTION (if app. N/A enformed with current firm
d.	(1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation, Luze (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with s condition and compliance with currer critiqued. Two-dimensional hydraulic solutions evaluated included embank Final rehabilitation design includes ex discharge capacity, flattening downst outlet works with pneumatically-ope (1) TITLE AND LOCATION (City and State) Six Dam Assessments, Statewide Ma (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) NACS. Project Manager for the comp	erne County, PA AND SPECIFIC ROLE It Manager for compuse earthfill dam with subsurface explorate that dam safety designant armoring and expanding existing autream embankment rated knife gate values and specific Role AND SPECIFIC ROLE Lettion of dam asses	oletion of preliming the a concrete core ions, site reconnant criteria. Alternation of the application of ixiliary spillway and isope, installing twes to provide a research reports for the application of ixiliary spillway and isope, installing twes to provide a research reports for the application of ixiliary spillway and isope, installing the application of ixiliary spillway and ixiliary spillway spillway and ixiliary spillway spillway and ixiliary spillway spillway spillway spillway spillway spillwa	inary desi e wall. Er aissance, ative desi fy downst of crest go nd install new drain means of	c) YEAR (2) YEAR (3) YEAR (3) YEAR (4) YEAR (5) Ongoing (2016) Check if project pages proposed pages and field surveys to a gen solutions were detected in the surveys to a gen solutions were detected in the surveys to a gen solutions were detected in the surveys to a gen solutions were detected in the surveys to a gen solutions were detected in the surveys to a gen solutions were detected in the surveys to a gen solutions were detected in the surveys to a gen solution in the surveys to a gen solution in the surveys to a gen su	completed construction (if appl. N/A erformed with current firm r a high-hazard 65- d construction plans assess the dam's eveloped and at risk. Alternative labyrinth spillways. ates to increase strofitting existing ee: \$1.85M (est.) completed construction (if appl. N/A erformed with current firm lam inspections;
	Pikes Creek Dam Rehabilitation, Luze (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water. Project foot-high, 2,155-foot-long homogeno were reviewed and augmented with s condition and compliance with currer critiqued. Two-dimensional hydraulic solutions evaluated included embank Final rehabilitation design includes ex discharge capacity, flattening downst outlet works with pneumatically-open (1) TITLE AND LOCATION (City and State) Six Dam Assessments, Statewide Ma	erne County, PA ND SPECIFIC ROLE It Manager for coming us earthfill dam with subsurface explorate that dam safety designant armoring and expanding existing authorized knife gate values assachusetts AND SPECIFIC ROLE Letion of dam assest tream impact areas	oletion of prelimits to a concrete core ions, site reconnant criteria. Alternation of identification of ixiliary spillway as slope, installing inves to provide a respective to provide a respective control of its performed dames.	inary desi e wall. Er alssance, ative desi fy downst of crest go nd install new drain means of	Caperage (2) YEAR (2) YEAR (2) YEAR (3) YEAR (3) YEAR (4) PROFESSIONAL SERVICES Ongoing (2016) ☐ Check if project programmer of the project	completed construction (if appl. N/A erformed with current firm r a high-hazard 65- d construction plans assess the dam's eveloped and at risk. Alternative labyrinth spillways. ates to increase trofitting existing ee: \$1.85M (est.) completed construction (if app N/A leafformed with current firm lam inspections; AS; prepared

10		MES OF KEY PERSO (Complete one Sec	tion E for each ke	ED FOR	R THIS CONTRACT	
	NAME illiam J. Kingston III, CFM	13. ROLE IN THIS CON	TRACT			XPERIENCE
	•	Hydraulics and I	Hydrology	5		b. WITH CURRENT FIRM 2
15.	FIRM NAME AND LOCATION (City and State)				<u> </u>	
16.	Education (Degree and Specialization)		Lanconi			
	/Civil Engineering		EIT/PA	FESSIONA	AL REGISTRATION (STATE AND	D DISCIPLINE)
	S/Civil Engineering		Certified Floor	dolain	Managar	
18.	OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organications)	anizations, Training, Awards,	etc i	upiain	ivranager	
Pr	ofessional Organizations: ASFPM; ASCE, Bo	pard of Directors, 2	015-2016			
	(1) TITLE AND LOCATION (City and State)	19 RELEVA	NT PROJECTS			
					(2) YEAR PROFESSIONAL SERVICES	COMPLETED
	Beaverdam Creek Dam Rehabilitation, I	oudoun County, V	A		2013	CONSTRUCTION (if appl.) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPECIFIC ROLE			Check if arriant a	Conformed with a week 5
a.	City of Fairfax Department of Utilities. H	&H Designer review	ing the rehabili	itation	design and preparing	a preliminary
	construction cost estimate for the dam r	ehabilitation. Checl	ced structural st	tability	analyses that were p	erformed for proposed
	structure, estimated quantities, unit cost	ts, and lump sum co	sts for various	compo	nents, and developed	a detailed
	construction cost summary, Fee: \$797K			·		
	(1) TITLE AND LOCATION (City and State)					COMPLETED
	Smithfield Lake Hydrologic Assessment,	Smithfield, VA			PROFESSIONAL SERVICES 2013	CONSTRUCTION (if appl.)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	SPECIFIC ROLE				N/A performed with current firm
	Town of Smithfield. H&H Designer evalua	ating H&H characte	ristics of a signif	ficant l	nazard structure and v	watershed in support of
b.	a reassessment of the dam's hazard pote	ential classification.	conducted hyd	Irologia	evaluation to determ	nine rainfall-runoff
	response of watershed and assess reserv	oir response under	different loadir	ng con	ditions. Reviewed pre	vious documents and
	analyses including dam breach analyses,	H&H models, and o	lesign reports: o	calcula	ted watershed param	eters following NRCS
	methodology; developed watershed and	reservoir routing n	nodel: assessed	prior h	nazard potential classi	ification and spillway
	i design fiood: evaluated frequency of roa	d overtopping; and	determined alt	ternativ	es to increase spillwa	av canacity Fee: \$12k
	(1) Manager and Control (Only and Charle)				(2) YEAR (COMPLETED
	Necedah National Wildlife Refuge Dam	Breach Consequent	ce and Hazard	1	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	Classification Reassessment and Inunda	tion Mapping, June	au County, WI		2015	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	SPECIFIC ROLE			Check if project p	erformed with current firm
C.	U.S. Fish and Wildlife Service, H&H Design	ner conducting deta	alled hydrologic	analys	ses for four dams. Wo	rk supported 2D dam
	break hydraulic analyses to reassess the l	nazaro potential cla	issification of ea	ach str	ucture. Reviewed exi	sting H&H data;
	provided field reconnaissance; collected	tramic count data;,	analyzed soil, ía	and use	e, and topographic da	ta; determined key
	watershed parameters following NRCS m	ethodology; optain	ed probable ma	aximun	n precipitation/storm	estimates, developed
	a HEC-HMS hydrologic model, and estima (1) TITLE AND LOCATION (City and State)	iteu dam breach pa	rameters. Fee:	\$2.5M		Ouni ETER
	Sheppard-Myers Dam Rehabilitation Con	ncentual Design W	est Manhaim		PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)
	Township, PA	Topical Design, 11	est Mannenn	- 1	2014	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	PECIFIC ROLE			M at 115	
	Borough of Hanover. H&H Designer perfo	rming H&H analyse	s and design fo	r imnr	Overnents at Shonnar	erformed with current firm
.	Performed alternatives analysis to detern	nine most appropri	ate rehabilitatio	on alte	rnative Conducted sit	te inspection
ď.	reviewed historic documentation, waters	hed and reservoir r	outing models	and ar	nual inspection repo	rts compiled a list of
	known and potential dam deficiencies, pe	erformed H&H anal	vses for concept	tual de	sign of dam rehabilit:	ation alternatives
	estimated Pivir and other events, evaluat	ed conveyance cap	acity and prepa	ared spi	illway discharge rating	curves performed
-	standard-step backwater analyses of the	reach downstream,	designed single	e- and	two-stage lahyrinth w	eir snillway decigned
	new spillway chutes and stilling basins for	r proposed alternat	ives, prepared o	detaile	d cost estimate for ea	ich alternative and
	created conceptual design report to docu	ment conceptual d	esign process. F	Fee: \$1	22K	ion diterriative, and
ľ	(1) TITLE AND LOCATION (City and State)				(2) YEAR C	OMPLETED
	Dam Break Analysis for Clifton Forge Dar	n, Clifton Forge, VA	N .	- 1	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
ı	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SI	PECIFIC ROLE			2014	N/A
	Town of Clifton Forge. H&H Designer cond	ducting a detailed d	am break analv	sis of a	54-foot-high concret	e gravity dam
e.	Reviewed existing H&H data; provided fie	Id reconnaissance:	analyzed soil. Ia	and use	and tonographic da	ta: performed
	riyurologic analyses using GIS-based wate	rshed models and H	IEC-HMS, apply	ing HN	AR 51 and 52 method	alagy to obtain
1	probable maximum precipitation/storm e	stimates; develope	d a hvdraulic co	omputa	ition using HFC-GeoR.	AS and HEC-RAS.
	analyzed complex hydraulics beneath the	town; conducted d	am breach anal	lyses ar	nd hydraulic computa	tions using HEC-PAS-
	identified flood nazard areas; and develop	ed flood inundatio	n hazard area n	naps. (Evaluated sunny day a	and hydrologic
$_{\perp}$	loading conditions to predict the flood ext	ents and water sur	face elevations	of out	flow from the reservo	ir. Fee: \$62K

r. t. t.	ange Marinety	E. RESUMES OF KEY PERSO	ONNEL PROPOSED FOR tion E for each key person	.)	
	R. Beenenga, PE	13. ROLE IN THIS CONTRACT Subsurface Investigation/Geologic Eval		14. YEA	RS EXPERIENCE b. WITH CURRENT FIRM 27
	RM NAME AND LOCATION				_
AA/I	DUCATION (DEGREE AND S Engineering Civil Engineering		17. CURRENT PROFESSIONAL Professional Engineer	REGISTRATION (STATE AND D WV, PA, VA	DISCIPLINE)
19 07	LED DOOFESSIONAL OIL	ALIFICATIONS (Publications, Organizations, Training, Awards,	etc.)	air (1001 present): ASI	
Prof	essional Organiza	tions: ASCE; Geotechnical Conference Org	NT PROJECTS	all (1331-present), Asi	330, 0330
	(1) TITLE AND LOCATION			(2) YEAR CO PROFESSIONAL SERVICES	OMPLETED CONSTRUCTION (if appl.)
	Upper Deckers Sit County, WV	te 1 Dam Rehabilitation, Preston	Section F #1	Ongoing (2016)	N/A
H	(3) BRIEF DESCRIPTION	(Brief scope, size, cost, etc.) AND SPECIFIC ROLE			formed with current firm
a.	LF, high-hazard zo completed in 201 replacement of ris auxiliary spillway.	nager and Senior Geotechnical Engineer for oned earth embankment dam constructed 1. Rehabilitation included new stair-step ser structure, slope flattening, internal dr Directly responsible for completion of fi s, specifications, and a cost estimate. Fe	l in 1969. This project i ped RCC spillway armoi ainage elements, and e eld investigations, labo	s a continuation of pla ring detail on existing of mbankment construct	embankment, ion in existing
	(1) TITLE AND LOCATION	(City and State)			OMPLETED
		Construction-Phase Services for New	Section F #2	PROFESSIONAL SERVICES 2013	construction (if appl.) 2013
b.	NRCS. Assistant P design and constr dam. Rehabilitat toe drain installar field falling-head seepage; and des	(Brief scope, size, cost, etc.) AND SPECIFIC ROLE roject Manager and Geotechnical Project ruction package associated with rehabilitation includes auxiliary spillway RCC armorition and outlet works modifications. Serv permeability testing; geophysical testing; ign calculations for settlement, filters, and hedule, and instructions. Fee: \$3M	ation of 114-foot-high, some and flattening of do rices included subsurfact soils and rock laborate	al planning-level studions of the planning of	drainage blanket and meter installation; slope stability and stimates, construction
		anning Assistance for Salem Fork Dams	Section F #10	PROFESSIONAL SERVICES 2014	CONSTRUCTION (if appl.) N/A
c.	(3) BRIEF DESCRIPTION NRCS. Senior Geo embankment dat borehole rock-pr	, Preston County, WV (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Otechnical Engineer planning and coording ms. The investigation included soil and role essure testing. Coordinated laboratory te NRCS SITES software modeling of existing	ock drilling and sampling esting program of soil ar	stigation program for : g. The subsurface invend nd rock samples and des: \$200K	esign calculations
	(1) TITLE AND LOCATIO	N (City and State)		(2) YEAR PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (f appl.)
	Nesbitt Dam, La	kawanna County, PA		2012	2012
d.	Pennsylvania Am year-old, 101-foo Performed review with evaluation of phases of subsur	N (Brief Score, size, cost, etc.) AND SPECIFIC ROLE lerican Water. Senior Geotechnical Project ot-high, 538 foot-long composite earth en w of historical data, visual inspection, and of performance and recommendations fo face investigation. Developed geotechni	nbankment and stone r I analysis and interpret r additional investigatio	ation and analyses for masonry dam with mas ation of performance o ons and analyses. Perf rizing findings. Fee: \$3	sonry core wall. data. Prepared report ormed first and second 3.7M
	(1) TITLE AND LOCATIO	N (City and State)		(2) YEAR PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)
	County, PA	n Rehabilitation Project – Preliminary De	sign Phase, Luzerne	Ongoing (2016)	N/A
e.	(3) BRIEF DESCRIPTION Pennsylvania And hazard 65-foot-beconstruction pla compliance with application of cr	N (Brief sccpe, size, cost, etc.) AND SPECIFIC ROLE nerican Water. Project Geotechnical Engiringh, 2,155-foot-long homogenous earthfins with subsurface explorations, site reconcurrent dam safety design criteria. Alter est gates, fuse gates, and labyrinth spillwins, design analyses documentation, and estages.	ill dam. Reviewed and a innaissance, and field s mative solutions evalua ays. Preliminary design	design-phase services augmented engineerin augmented engineerin urveys to assess dam's ted included embankr n memorandum preser	ig studies and scondition and nent armoring and nted preliminary design

		E. RESUMES OF KEY PERSO	ONNEL PROPOSED Fo		
Da	NAME Ivid M. Snyder, PE	13. ROLE IN THIS CONTRACT Subsurface Investigation/Geologic Eval Foundation Inspection	,	a. TOTAL 10	b. WITH CURRENT FIRM
0	FIRM NAME AND LOCATION Gannett Fleming,	Harrisburg, PA			<u> </u>
BS	EDUCATION (DEGREE AND S /Civil and Environme Eng/Geotechnical En	SPECIALIZATION) Ental Engineering Igineering	Professional Engin Approved Level 1 I First Aid-Adult CPR/AED-Adult		DISCIPLINE)
18. Pr	OTHER PROFESSIONAL QUA Difessional Organizat	ALIFICATIONS (Publications, Organizations, Training, Awards, tions: ASCE; ASDSO; USSD	etc.)		
	(1) TITLE AND LOCATION	(City and Street)	NT PROJECTS		
		nning Assistance for Upper Deckers		(2) YEAR PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)
	Creek Site 1, Prest	on County, WV	Section F #1	Ongoing (2016)	N/A
a.	NRCS. Geotechnica high zoned emban geophysical survey also included bore coordination of the	Brief scope, size, cost, etc.) AND SPECIFIC ROLE All Project Engineer planning and coordinal kment dam. The investigation included 8 /s consisting of seismic refraction and mul hole rock pressure testing and installation e laboratory testing program of soil and re	190 LF of soil and roc Itichannel analysis o n of vibrating-wire p ock samples, prepan	vestigation program for k drilling and sampling, f surface waves. The su iezometers. Additional ation of an investigation	as well as 2,300 LF of bsurface investigation services included
	(1) TITLE AND LOCATION (ated with NRCS SITES modeling of existing	g and proposed auxi	liary spillways. Fee: \$9	99K (est.)
		onstruction-Phase Services for Lost	Section F #6	PROFESSIONAL SERVICES 2015	COMPLETED CONSTRUCTION (if appl.) N/A
b.	(3) BRIEF DESCRIPTION (I NRCS. Geotechnica embankment dam. toe drain pipes for construction specification.	Brief scope, size, cost, etc.) AND SPECIFIC ROLE Il Project Engineer for final design calcular Services included design calculations for final design. Additional services included fications, and instructions to the engineer	r slope stability, see _l I review of construct	h the design of a new 80 page, settlement, and fi	lters and drains and
ĺ	(1) TITLE AND LOCATION (Final Design and C Creek Site 14, Gran	onstruction-Phase Services for New	Section F #2	PROFESSIONAL SERVICES 2013	COMPLETED CONSTRUCTION (if appl.) 2013
C.	NRCS. Geotechnica zoned embankmen for final design. Ad specifications, and	arief scope, size, cost, etc.) AND SPECIFIC ROLE Il Engineer for final design calculations ass It dam. Services included design calculati Iditional services included review of const instructions to the engineer. Fee: \$3M	ons for slope stabilit	habilitation design of an	and filters and drains
	(1) TITLE AND LOCATION (City and State) horn Run Dam, Butler County, PA		(2) YEAR O	OMPLETED
				2012	CONSTRUCTION (if appl.) 2012
d.	Pennsylvania Amer inspection. The tes siltstone, or shale r addressing slope st	inief scope, size, cost, etc.) AND SPECIFIC ROLE ican Water. Geotechnical Designer for sulting program for the borings included per ock formations during coring. Additional ability, seepage, and settlement of soils d otechnical investigation and laboratory so	netration testing and responsibilities inclu lue to spillway const	on and vibrating-wire pload NX rock coring. Encounted to the calculations and discretion and RCC armoring the existing dam.	Intered sandstone, esign reports ng of the dam. The ee: \$1.3M
ĺ		abilitation, Lackawanna County, PA		(2) YEAR C PROFESSIONAL SERVICES	OMPLETED CONSTRUCTION (if appl.)
e.	(3) BRIEF DESCRIPTION (BI Pennsylvania Ameri an existing 64-foot- stability, seepage at excavation design, a generating cost esti	rief scope, size, cost, etc.) AND SPECIFIC ROLE ican Water. Geotechnical Project Enginee high composite stone masonry and earth nd drain design, dam and retaining wall st and dewatering system design for excavat mates, design reports, and a geotechnica g specifications and drawings. Fee: \$1.91	fill embankment dar tability, post-tension tions up to 40 feet in I baseline report and	Ongoing (2017) Check if project pe d final design calculation m. Geotechnical calculated anchor design, temp	Ongoing (2017) fromed with current firm as for rehabilitation of a citions included slope corary support of consibilities include

Secret S			E. RESUMES OF KEY PERSO (Complete one Sec	NNEL PROPOSED F tion E for each key pe	rson.)	
## SEACHION PEGER AND SPECIALIZATION BY/Earth Sciences N/Geology 19. FELEVANT PROJESSIONAL PROJECTION SPECIALIZATION 19. FELEVANT PROJESSIONAL PROJECTION PROPERTY FOR PROJECT STATE AND DROPPING. 19. FELEVANT PROJESSIONAL PROJECTION PROJECT STATE AND DROPPING. 19. FELEVANT PROJESSIONAL PROJECTION PROJECT STATE AND DROPPING. 19. FELEVANT PROJESSIONAL PROJECT STATE AND DROPPING. 19. FELEVANT PROJESSIONAL PROJECT STATE AND PROJECT STATE AND DROPPING. 19. FELEVANT PROJECTS	Jere	my S. Robinson, PG	13, ROLE IN THIS CONTRACT Subsurface Investigation/Geologi		a. TOTAL	b. WITH CURRENT FIRM
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Professional Organizations: National Ground Water Association; Association of Environmental and Engineering Geologists: Harrisburg Area Geological Society 19. RELEVANT PROJECTS Organization of Section F #1 Organiz	48 0	THE DECESSIONAL DUALIER.	ATIONS (Publications, Organizations, Training, Awards,	etc.)	-	
(1) TITLE AND LOCATION (City and States) Upper Deckers Site 1 Dam Rehabilitation, Geotechnical Drilling and Site Investigation, Preston County, W (2) States Description (State States) and Site Investigation, Preston County, W (3) States Description (State States) and States Investigation included 305 LF of soil and rock drilling and sampling, as well as the assessment of embankment dam. The investigation included 305 LF of soil and rock drilling and sampling, as well as the assessment of embankment dam. The investigation included 305 LF of soil and rock drilling and sampling, as well as the assessment of existing vibrating-wire pressure transducer instrumentation installed in existing Casagrande piezometers. The rock formation encountered during coring comprised sandstone, sitistone, claystone, and coal of the Allegheny Formation of Pennsylvanian age. The subsurface investigation included borehole rock pressure testing and installation of a Casagrande piezometer. Additional services included coordination of the laboratory testing program of soil, rock, and water samples; preparation of an investigation report; and the troubleshooting, reprogramming, and redeployment of vibrating-wire pressure transducer instrumentation. Fee: \$999K (feet.) (3) THE EARL DECRIPTION (State State State) AND SPECIFIC ROLE NRCS. Statif Geologist responsible for conducting execavation inspection and sampling at 30 test pits located at proposed soil barrow areas, the proposed spillway area, and along the proposed centerline of the dam. The soil test pit information was included in an investigation report to the NRCS in May 2005. Fee: >SZM (I) THE AND DECRIPTION (State State) AND SPECIFIC ROLE NRCS. Staff Geologist responsible for conducting exeavation inspection and sampling at 30 test pits located at proposed soil barrow areas, the proposed spillway area, and along the proposed centerline of the dam. The soil test pit information was included in an investigation report to the NRCS in May 2005. Fee: >SZM (I) THE AND DECRIPTION (Prof	essional Organizations	s: National Ground Water Association	; Association of En	vironmental and Engineer	ing Geologists;
Upper Deckers Site 1 Dam Rehabilitation, Geotechnical Properties of the Alleghery Formation of regot on the Properties of the American County, WV (9) BREF DESCRIPTION (Americans, etc., cast, acts) AND SPECIFIC ROLE ANCES, Project Geologist responsible for overseeing a subsurface investigation program for an existing 45-foot-high zoned embankment dam. The investigation included 306 LF of soil and rock drilling and sampling, as well as the assessment of existing ubrating—wire pressure transducer instrumentation installated in existing Casagrande piezometers. The rock formation age. The subsurface investigation included borehole rock pressure testing and installation of a Casagrande piezometer. Additional services included coordination of the laboratory testing program of soil, rock, and water samples, preparation of an investigation report; and the troubleshooting, reprogramming, and redeployment of vibrating-wire pressure transducer instrumentation. Fee: 599MK (est.) 10) THELE AND TOCK FIRM AND ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUCTION (# acc) 10) THELE AND TOCK FIRM AND ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUCTION (# acc) 10) THELE AND TOCK FIRM AND ASSESSED SOIL TOCK AND ASSESSED FIRM ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUCTION (# acc) 10) THE AND TOCK FIRM AND ASSESSED SOIL TOCK AND ASSESSED FIRM ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUCTION (# acc) 11) THE AND TOCK FIRM AND ASSESSED SOIL TOCK AND ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUCTION (# acc) 12) THE AND TOCK FIRM AND ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUCTION (# acc) 13) ASSESSED DESCRIPTION (# acc) AND ASSESSED FIRM ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUCTION (# acc) 14) AND TOCK FIRM ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUCTION (# acc) 15) AND TOCK FIRM ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUCTION (# acc) 16) AND TOCK FIRM ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUCTION (# acc) 17) AND TOCK FIRM ASSESSED SOIL TEST PROPERSIONAL SERVICES CONSTRUC	Harı	isburg Area Geological	Society 19 RELEVA	NT PROJECTS		
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Drilling and Site Investigation, Preston County, WV (2) BRBET DESCRIPTION (Main Secure, Date, 1994, 2004) REFERENCE (NO.1) (3) RRD SECURITY (Main Secure) Research (M. 1994) REFERENCE	1			Section F #1		
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instrumentation. Fee: \$999K (est.) (I) THILE AND LOCATION (Cit) and State) Soil Test Pit Investigation, Lost River Site No. 16, Lost River, WV (B) BREE DESCRIPTION (Brief access, size ceet, acc.) AND SPECIFIC ROLE NRCS. Staff Geologist responsible for conducting excavation inspection and sampling at 30 test pits located at proposed soil barrow areas, the proposed spillway area, and along the proposed centerline of the dam. The soil test pit information was included in an investigation report to the NRCS in May 2005. Fee: >\$2M (I) THILE AND LOCATION (Cit) and State) New Creek Site 14 Dam Rehabilitation, Grant County, WV (I) BRIEF DESCRIPTION (3nd State) New Creek Site 14 Dam Rehabilitation, Grant County, WV (I) BRIEF DESCRIPTION (3nd State) New Creek Site 14 Dam Rehabilitation, Grant County, WV (I) BRIEF DESCRIPTION (3nd State) New Creek Site 14 Dam Rehabilitation, Grant County, WV (I) BRIEF DESCRIPTION (3nd State) New Creek Site 14 Dam Rehabilitation, Grant County, WV (I) BRIEF DESCRIPTION (3nd State) New Creek Site 14 Dam Rehabilitation, Grant County, WV (I) BRIEF DESCRIPTION (3nd State) New Creek Site 14 Dam Rehabilitation, Grant County, WV (I) BRIEF DESCRIPTION (3nd State) PROFESSIONAL SERVICES CONSTRUCTION (if appl.) New Creek Site 14 Dam Rehabilitation and state investigation, Luzerne County, PA (I) THILE AND LOCATION (Cit) and State) PROFESSIONAL SERVICES CONSTRUCTION (if appl.) N/A (I) THILE AND LOCATION (Cit) and State) PROFESSIONAL SERVICES CONSTRUCTION (if appl.) N/A (I) THILE AND LOCATION (Cit) and State) PROFESSIONAL SERVICES CONSTRUCTION (if appl.) N/A (I) THILE AND LOCATION (Cit) and State) PROFESSIONAL SERVICES CONSTRUCTION (if appl.) N/A (I) THILE AND LOCATION (Cit) and State) PROFESSIONAL SERVICES CONSTRUCTION (if appl.) N/A (I) THILE AND LOCATION (Cit) and State) PROFESSIONAL SERVICES CONSTRUCTION (if appl.) N/A (I) THILE AND LOCATION (Cit) and State) PROFESSIONAL SERVICES CONSTRUCTION (if appl.) N/A (I) THILE AND LOCATION (Cit) and S	a.	NRCS. Project Geologis embankment dam. The existing vibrating-wire encountered during coage. The subsurface in Additional services income	st responsible for overseeing a subsume investigation included 306 LF of some pressure transducer instrumentation oring comprised sandstone, siltstone, nits at laboratory cluded coordination of the laboratory	il and rock drilling a n installed in existir claystone, and coa pressure testing and testing program of	program for an existing 45 and sampling, as well as the casagrande piezometer of the Allegheny Format dinstallation of a Casagran f soil, rock, and water sam	5-foot-high zoned he assessment of s. The rock formation ion of Pennsylvanian nde piezometer. ples; preparation of
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Solf Test Pit Investigation, Lost River Site No. 16, Lost River, WV 8) BRIEF DESCRIPTION (Brief ecope, size, cost, etc.) AND SPECIFIC ROLE NRCS. Staff Geologist responsible for conducting excavation inspection and sampling at 30 test pits located at proposed soil barrow areas, the proposed spillway area, and along the proposed centerline of the dam. The soil test pit information was included in an investigation report to the NRCS in May 2005. Fee: >\$2M (1) TITLE AND LOCATION (CR) and State) New Creek Site 14 Dam Rehabilitation, Grant County, WY (2) BRIEF DESCRIPTION (Brief acope, size, cost, etc.) AND SPECIFIC ROLE NRCS. Staff Geologist responsible for monitoring embankment slope stability during reservoir dewatering. New Creek Site 14 Dam is an existing 93-foot-high, 940-foot-long zoned earth embankment dam. Data collection of 16 Casagrande plezometers equipped with vibrating wire pressure transducers and inclinometers was performed to monitor site conditions during the drawdown of the reservoir. Fee: \$3M (1) TITLE AND LOCATION (City and State) Prices Creek Dam, Geotechnical Drilling and Site Investigation, Luzerne County, PA (3) BRIEF DESCRIPTION (Brief acope, size, cost, etc.) AND SPECIFIC ROLE Pennsylvania American Water. Project Geologist for the subsurface investigation. The drilling program included standard penetration testing, NX rock coring, and rock pressure testing for the borings. Test pit excavation was also performed to assess material in a proposed borrow area. The rock formations encountered during coring consisted of sandstone and siltstone of the Catskill Formation of Devonian age. The data and samples obtained during the site exploration program were used to address the rehabilitation and remedial construction concerns at Pikes Creek Dam, which include insufficient spillwa capacity, seepage, slope stability, and structural stability. The subsurface exploration results were summarized in a geotechnical exploration report and used in the preliminary geotechnical design report. Fee:	-	(1) TITLE AND LOCATION (City a	and State)			
b. (8) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE NRCS. Staff Geologist responsible for conducting excavation inspection and sampling at 30 test pits located at proposed soil barrow areas, the proposed spillway area, and along the proposed centerline of the dam. The soil test pit information was included in an investigation report to the NRCS in May 2005. Fee: >\$2M (2) YEAR COMPLETED New Creek Ste 14 Dam Rehabilitation, Grant County, WY (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE NRCS. Staff Geologist responsible for monitoring embankment slope stability during reservoir dewatering. New Creek Site 14 Dam is an existing 93-foot-high, 940-foot-long zoned earth embankment dam. Data collection of 16 Casagrande plezometers equipped with vibrating wire pressure transducers and inclinometers was performed to monitor site conditions during the drawdown of the reservoir. Fee: \$3M (1) TITLE AND LOCATION (City and Sites) PROFESSIONAL SERVICES (2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if spc/) 2013 (1) TITLE AND LOCATION (City and Sites) (2) YEAR COMPLETED PROFESSIONAL SERVICES (2) YEAR COMPLETED CONSTRUCTION (if spc/) 2015 (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Pennsylvania American Water. Project Geologist for the subsurface investigation. The drilling program included standard penetration testing, NX rock coring, and rock pressure testing for the borings. Test pit excavation was also performed to assess material in a proposed borrow area. The rock formations encountered during coring consisted of sandstone and siltstone of the Catskill Formation of Devonian age. The data and samples obtained during the site exploration program were used to address the rehabilitation and remedial construction concerns at Pikes Creek Dam, which include insufficient spillwa capacity, seepage, slope stability, and structural stability. The subsurface exploration results were summarized in a geotechnical exploration report a			tion, Lost River Site No. 16, Lost	Section F #6		
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State Park Dams Rehabilitation, Swift Creek Dam Geotechnical Drilling and Site Investigation, Chesterfield County, VA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Virginia Department of Conservation and Recreation. Project Geologist for subsurface investigation at an existing concrete dam. Investigation included 135 LF of concrete and rock drilling conducted at top of the non-overflow abutment sections. Rock formation encountered during coring comprised the Petersburg Granite of Mississippian age. Drilling investigation was performed to assess character and condition of concrete and bedrock at dam. Data obtained from subsurface investigation	d.	(3) BRIEF DESCRIPTION (Brief Pennsylvania America penetration testing, Nassess material in a pailtstone of the Catski used to address the rapacity, seepage, slogeotechnical explorations.	an Water. Project Geologist for the sun Water. Project Geologist for the sun water to be rock coring, and rock pressure test roposed borrow area. The rock form all Formation of Devonian age. The dehabilitation and remedial construction ope stability, and structural stability. It is the prelimina	ting for the borings ations encountered ata and samples ob on concerns at Piko The subsurface exp	tion. The drilling program Test pit excavation was d during coring consisted o stained during the site exp es Creek Dam, which inclu bloration results were sum sign report. Fee: \$ 1.85M	included standard also performed to of sandstone and doration program were de insufficient spillway marized in a
Site Investigation, Chesterfield County, VA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE (a) Check if project performed with current firm Virginia Department of Conservation and Recreation. Project Geologist for subsurface investigation at an existing concrete dam. Investigation included 135 LF of concrete and rock drilling conducted at top of the non-overflow abutment sections. Rock formation encountered during coring comprised the Petersburg Granite of Mississippian age. Drilling investigation was performed to assess character and condition of concrete and bedrock at dam. Data obtained from subsurface investigation				hnical Drilling and	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
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Subsurface Investigation/ Geologic Evaluation; a TOTAL 10 b WIT CONCENTRY			E. RESUMES OF KEY PERS	ONNEL PROPOSED I	FOR THIS CONTRACT	
© Bearnett Flemming, Harrisburg, PA 17. CUMBENT PROFESSIONAL RESIDENCE (STATE AND DISCPLUSE) 18. (CIVIET PROFESSIONAL DEPOCRETION) 18. (CIVIET PROFESSIONAL DEPOCRETION) 19. PROFESSIONAL DEPOCRETION PROFESSIONAL DEPOCRETION PROFESSIONAL PROFESSIONAL DEPOCRETION PROFE	Ec	lward J. Barben, PE	13. ROLE IN THIS CONTRACT Subsurface Investigation/Geolog Foundation Inspection		a. TOTAL	b. WITH CURRENT FIRM
17. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) Professional Legioner/PA MS/CIVIL Engineering Solvil Engineering Solvil Engineering MS/CIVIL Engineering MS/CIVIL Engineering MS/CIVIL Engineering Solvil Engineering Solvil Engineering MS/CIVIL Engineering MS/CIVIL Engineering To Professional Driganizations: ASDSO; USSD; Chil Epsilon, CiVII Engineering Honor Society 19. RELEVANT PROJECTS New Creek Site 14 Dam Rehabilitation, Grant County, WV OBJECT DESCRIPTION (Site Applications: ASDSO; USSD): Child Engineering Honor Society 10. District Description (Site Applications: ASDSO; USSD): Child Engineering Honor Society 10. District Description (Site Applications): ASDSO; USSD; Chil Epsilon, CiVII Engineering Honor Society 10. District Description (Site Applications): Association of Society Description (Site Applications): Association (Site Applications): Associations): Association (Site Applications): Association (Site Applications):	15.	FIRM NAME AND LOCATION (City a	and State)			
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Standard First Aid; CPRAED Standard First Aid; CPRAED Standard First			nesation)	Professional Engi	IONAL REGISTRATION (STATE AND	DISCIPLINE)
18 OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, 1950S), USSS); Chi Epsilon, Civil Tengineering Honor Society 19 RELEVANT PROJECTS 19 RELEVANT PROJECTS 2013 2013 2013 2013 2013 2013 2013 201	M.	S/Civil Engineering		Standard First Air	-	
19 PRILE AND LOCATION (City and State) 19 PRILE AND LOCATION (City and Location (C	18.	OTHER PROFESSIONAL QUALIFIC	ATIONS (Publications, Organizations, Training, Awards	etc I		
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New Creek Site 14 Dam Rehabilitation, Grant County, WY Section F #2 2013 2014 2015 2016 2017 2018 2016 2016 2017 2017 2017 2017		(1) TITLE AND LOCATION (City a	19 RELEV	ANT PROJECTS		
(3) BRIEF DESCRIPTION (Rend access, size, cost, dec.) AND SPECIFIC ROLE NRCS. Geotechnical Designer for subsurface investigation and vibrating-wire piezometer installation inspection for a 114- foot-high, 940-foot-long, zoned earth embankment dam. Drilling program included penetration testing, borehole falling- head permeability testing, and NX rock coring. Rock formations encountered during coring were composed of siltstone and shale. Assisted in inspection of two boreholes advanced through dam's central clay core conforming to specifications required by RF-111011807. Configured borehole logging software, prepared site investigation report, prepared laboratory testing program, and designed calculations addressing auxiliary spillway integrity. Performed liquefaction, slope stability, and seepage collection system analyses. Assisted in seepage modeling and embankment zoning compatibility analyses. Prepared final geotechnical design deliverable and addressed client review comments where applicable. Fee: S3M (1) TIME AND LOCATION (CO) and State) Lost River No. 16 Dam, Hardy County, WV Section F #6 (2) SPECE DESCRIPTION (Bland MacQue, also, cout, and) AND SPECIFIC ROLE NRCS. Geotechnical Designer preparing final design investigation report for new 80-foot-high, zoned earth embankment dam. Prepared subsurface profiles based on test-boring information, prepared a proposed soil and rock laboratory testing program, analysis of collected bulk soil and rock core samples for hardness and breakdown ability, and completed of analysis using Water Resources Site Analysis Computer Program. Fee: >\$2NM (1) TIME AND LOCATION (Graver State) (1) TIME AND LOCATION (Graver State) (2) SPECE DESCRIPTION (Bland Accops, also, cost, als						
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Section F #6 2015 N/A (3) BRIEF DESCRIPTION (Bindf scope, size, cost, etc.) AND SPECIFIC ROLE NRCS. Geotechnical Designer preparing final design investigation report for new 80-foot-high, zoned earth embankment dam. Prepared subsurface profiles based on test-boring information, prepared a proposed soil and rock laboratory testing program, analysis of collected bulk soil and rock core samples for hardness and breakdown ability, and completed of analysis using Water Resources Site Analysis Computer Program. Fee: >\$2M (1) TITLE AND LOCATION (City and State) Hibernia Dam, Chester County, PA Section F #8 Section F #8 Section F #8 PROFESSIONAL SERVICES Ongoing (2016) (3) BRIEF DESCRIPTION (Bindf scope, size, cost, etc.) AND SPECIFIC ROLE CCW/RA. Geotechnical Designer for geotechnical analysis and insight of 64.5-foot-high Hibernia Dam. Unusually high phreatic levels observed in existing casagrande piezometers prompted a concern over the integrity and stability of the dam. Created embankment cross sections based on historic data and performed preliminary slope stability analysis. Prepared cost estimate, drilling contract, and bid documents for proposed subsurface investigation and piezometer installation plan. Developed laboratory soil testing program and completed additional slope stability and seepage analyses using interpreted soil properties and piezometric data. Prepared technical report documenting subsurface exploration and laboratory testing findings. Provided recommendations for future investigations. Fee: \$2.5M (est.) (1) TITLE AND LOCATION (Giv and State) NRCS Dama Assessments, Various Locations, WV PROFESSIONAL SERVICES ONSTRUCTION (Fine) proper dose of the proper documenting subsurface exploration and laboratory testing findings. Provided recommendations for future investigations. Fee: \$2.5M (est.) NRCS Dama Assessments, Various Locations, WV PROFESSIONAL SERVICES ONSTRUCTION (Fine) proper dose of the proper document with current firm NRCS. Geotechnical Designer assessing the geotechnica		(1) TITLE AND LOCATION (City 8)	no State)		(2) YEAR	COMPLETED
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(1) TITLE AND LOCATION (City and State) Hibernia Dam, Chester County, PA Section F#8 Section F#8 Section F#8 Check if project performed with current firm (2) YEAR COMPLETED PROFESSIONAL SERVICES Ongoing (2016) N/A (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE CCWRA. Geotechnical Designer for geotechnical analysis and insight of 64.5-foot-high Hibernia Dam. Unusually high phreatic embankment cross sections based on historic data and performed preliminary slope stability and stability of the dam. Created embankment cross sections based on historic data and performed preliminary slope stability analysis. Prepared cost estimate, drilling contract, and bid documents for proposed subsurface investigation and piezometer installation plan. Developed laboratory soil testing program and completed additional slope stability and seepage analyses using interpreted soil properties and piezometric data. Prepared technical report documenting subsurface exploration and laboratory testing findings. Provided recommendations for future investigations. Fee: \$2.5M (est.) (1) TITLE AND LOCATION (City and State) NRCS Dam Assessments, Various Locations, WV PROFESSIONAL SERVICES CONSTRUCTION (If appl.) N/A (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE NRCS. Geotechnical Designer assessing the geotechnical elements for 21 flood control dams in multiple West Virginia watersheds to determine if the dams complied with current NRCS and state design standards. Work included performing dam inspections, providing geotechnical parameters for auxiliary spillway analyses using SITES, and evaluating existing seepage control elements. Additional responsibilities included summarizing findings within dam assessment reports and reviewing priority ranking spreadsheets for each dam. Fee: \$400K (1) TITLE AND LOCATION (City and State) Nesbitt Dam, Lackawanna County, PA PROFESSIONAL SERVICES CONSTRUCTION (If appl.) (2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (If appl.) (3		program, analysis of co	ellected bulk soil and rock sore same	lon, prepared a pro	posed soil and rock labo	ratory testing
Hibernia Dam, Chester County, PA Section F #8 Section F #8 Section F #8 Section F #8 Check if project performed with current firm CCWRA. Geotechnical Designer for geotechnical analysis and insight of 64.5-foot-high Hibernia Dam. Unusually high phreatic ereblands are setting casagrande piezometers prompted a concern over the integrity and stability of the dam. Created embankment cross sections based on historic data and performed preliminary slope stability analysis. Prepared cost estimate, drilling contract, and bid documents for proposed subsurface investigation and piezometer installation plan. Developed laboratory soil testing program and completed additional slope stability and seepage analyses using interpreted soil properties and piezometric data. Prepared technical report documenting subsurface exploration and laboratory testing findings. Provided recommendations for future investigations. Fee: \$2.5M (est.) (1) TITLE AND LOCATION (Clty and State) NRCS Dam Assessments, Various Locations, WV (3) BRIEF DESCRIPTION (Biner scope, size, cost, etc.) AND SPECIFIC ROLE NRCS. Geotechnical Designer assessing the geotechnical elements for 21 flood control dams in multiple West Virginia watersheds to determine if the dams complied with current NRCS and state design standards. Work included performing dam inspections, providing geotechnical parameters for auxiliary spillway analyses using SITES, and evaluating existing seepage control elements. Additional responsibilities included summarizing findings within dam assessment reports and reviewing priority ranking spreadsheets for each dam. Fee: \$400K (1) TITLE AND LOCATION (City and State) Nebitt Dam, Lackawanna County, PA PROFESSIONAL SERVICES Construction (if appl.) PROFESSIONAL SERVICES Construction (if appl.) 2012 Check if project performed with current firm PROFESSIONAL SERVICES CONSTRUCTION (if appl.) PROF		using Water Resources	Site Analysis Computer Program E	es for naruness and	breakdown ability, and	completed of analysis
Hibernia Dam, Chester County, PA Section F#8 Section F#8 Section F#8 Section F#8 PROFESSIONAL SERVICES Ongoing (2016) N/A (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE CCWRA. Geotechnical Designer for geotechnical analysis and insight of 64.5-foot-high Hibernia Darm. Unusually high phreatic levels observed in existing casagrande piezometers prompted a concern over the integrity and stability of the dam. Created embankment cross sections based on historic data and performed preliminary slope stability analysis. Prepared cost estimate, drilling contract, and bid documents for proposed subsurface investigation and piezometer installation plan. Developed laboratory soil testing program and completed additional slope stability and seepage analyses using interpreted soil properties and piezometric data. Prepared technical report documenting subsurface exploration and laboratory testing findings. Provided recommendations for future investigations. Fee: \$2.5M (est.) (1) TITLE AND LOCATION (City and State) NRCS. Geotechnical Designer assessing the geotechnical elements for 21 flood control dams in multiple West Virginia watersheds to determine if the dams complied with current NRCS and state design standards. Work included performing dam inspections, providing geotechnical parameters for auxiliary spillway analyses using SITES, and evaluating existing seepage control elements. Additional responsibilities included summarizing findings within dam assessment reports and reviewing priority ranking spreadsheets for each dam. Fee: \$400K (1) TITLE AND LOCATION (City and State) Nesbitt Dam, Lackawanna County, PA (2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (If appl.) CONSTRUCTION (If appl.) PROFESSIONAL SERVICES CONSTRUCTION (If appl.) PROFESSIONAL SERVICES CONSTRUCTION (If appl.) CONSTRUCTION (If appl.) PROFESSIONAL SERVICES CON		(1) TITLE AND LOCATION (City ar	nd State)	ec. >\$2 V	(2) YEAR (OMPLETED
(3) BRIEF DESCRIPTION (Birief scope, size, cost, etc.) AND SPECIFIC ROLE CCWRA. Geotechnical Designer for geotechnical analysis and insight of 64.5-foot-high Hilbernia Dam. Unusually high phreatic levels observed in existing casagrande piezometers prompted a concern over the integrity and stability of the dam. Created embankment cross sections based on historic data and performed preliminary slope stability analysis. Prepared cost estimate, drilling contract, and bid documents for proposed subsurface investigation and piezometer installation plan. Developed laboratory soil testing program and completed additional slope stability and seepage analyses using interpreted soil properties and piezometric data. Prepared technical report documenting subsurface exploration and laboratory testing findings. Provided recommendations for future investigations. Fee: \$2.5M (est.) (1) TITLE AND LOCATION (City and State) NRCS Dam Assessments, Various Locations, WV (2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if appl.) 2011 N/A (3) BRIEF DESCRIPTION (Birle scope, size, cost, etc.) AND SPECIFIC ROLE NRCS. Geotechnical Designer assessing the geotechnical elements for 21 flood control dams in multiple West Virginia watersheds to determine if the dams complied with current NRCS and state design standards. Work included performing dam inspections, providing geotechnical parameters for auxiliary spillway analyses using SITES, and evaluating existing seepage control elements. Additional responsibilities included summarizing findings within dam assessment reports and reviewing priority ranking spreadsheets for each dam. Fee: \$400K (1) TITLE AND LOCATION (City and State) Nesbitt Dam, Lackawanna County, PA (2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if appl.) 2012 Check if project performed with current firm PROFESSIONAL SERVICES CONSTRUCTION (if appl.) 2012 Check if project performed with current firm PROFESSIONAL SERVICES CONSTRUCTION (if appl.) 2012 Check if project performed with current f		Hibernia Dam, Chester	County, PA		PROFESSIONAL SERVICES	
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NRCS Dam Assessments, Various Locations, WV PROFESSIONAL SERVICES CONSTRUCTION (if appl.)		findings Provided reco	mmondations for future investigation	port documenting s	ubsurface exploration ar	d laboratory testing
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(1) TITLE AND LOCATION (City and State) Nesbitt Dam, Lackawanna County, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Pennsylvania American Water. Geotechnical Designer for final design analysis for rehabilitation of 100-year-old, 101-foot-high, 538-foot-long, composite earth embankment and stone masonry dam with a masonry core wall. Analysis and calculations included borehole falling-head permeability, rock strength, downstream hillside slope stability, rolled wall design		seepage control elemen	ats Additional responsibilities include	lod suppose selection of the	ses using SITES, and eval	uating existing
(1) TITLE AND LOCATION (City and State) Nesbitt Dam, Lackawanna County, PA (2) YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if appl.) 2012 (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Pennsylvania American Water. Geotechnical Designer for final design analysis for rehabilitation of 100-year-old, 101-foot-high, 538-foot-long, composite earth embankment and stone masonry dam with a masonry core wall. Analysis and calculations included borehole falling-head permeability, rock strength, downstream hillside slope stability, rollef wall design		reviewing priority ranking	ng spreadsheets for each dam. Eco. 1	ieu summarizing fini Sannv	uings within dam assessr	nent reports and
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(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Pennsylvania American Water. Geotechnical Designer for final design analysis for rehabilitation of 100-year-old, 101-foot-high, 538-foot-long, composite earth embankment and stone masonry dam with a masonry core wall. Analysis and calculations included borehole falling-head permeability, rock strength, downstream hillside slope stability, rolled wall design.		Nesbitt Dam, Lackawan	na County, PA			
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calculations included borehole falling-head permeability, rock strength, downstream hillside slope stability, rollef well design	e.	Pennsylvania American	ope, size, cost, etc.) AND SPECIFIC ROLE	ol alasie 1	Check if project per	formed with current firm
calculations included porehole falling-head permeability, rock strength, downstream hillside slope stability, rollef-well design		high, 538-foot-long con	mosite earth embankment and stee	iai design analysis fo	or rehabilitation of 100-y	ear-old, 101-foot-
and fifter compatibility. Fee: \$3.7M		calculations included ho	rehole falling-head permochility	e masonry dam with	n a masonry core wall. A	nalysis and
		and filter compatibility	Fee: \$3.7M	.k strength, downstr	ream niliside slope stabil	ity, relief-well design,

174.4	War are	E. RESUMES OF KEY PERSO	ONNEL PROPOSED	erson)	
12. NA	ME	13. ROLE IN THIS CONTRACT		a. TOTAL	XPERIENCE b. WITH CURRENT FIRM
And	rew J. Smithmyer, PG	Subsurface Investigation/Geologic	: Evaluation	14	14
15. FJF	RM NAME AND LOCATION (City at	nd State)			
Č E	iannett Fleming, Harr	risburg, PA		SIGNAL REGISTRATION (STATE AN	D DISCIPLINE)
	UCATION (DEGREE AND SPECIA	ALIZATION)	PG/PA VA MSH	IA Mine Safety Certified;	Seneral Miner
	Geology			; Level 1 Drilling Inspecto	
	Engineering Geology	ATIONS (Publications, Organizations, Training, Awards	. etc.)		
Prof	essional Organizations	: National Ground Water Association	n, Association of G	round Water Scientists ar	id Engineers;
Pen	nsylvania Council of Pro	ofessional Geologists			
			ANT PROJECTS	(2) YEAR	COMPLETED
	(1) TITLE AND LOCATION (City a	ng Assistance for Upper Deckers		PROFESSIONAL SERVICES	
- 2	Creek Site 1, Preston		Section F #1	Ongoing (2016)	N/A
ŀ	THE PERSON OF TH	sees also cost of AND SPECIFIC POLE		Cneck if project	performed with ourrent firm
- 1	(3) BRIEF DESCRIPTION (Brief's	st planning, coordinating, and overse	eeing subsurface ir	vestigation program for a	45 foot-high zoned
a.	ambankment dam In	vestigation included 890 LF of soil ar	nd rock drilling and	I sampling, and 2,300 LF o	f geophysical surveys
-	empankment dam. III	efraction and multichannel analysis	of surface waves.	Subsurface investigation i	ncluded borehole rock
	consisting of seismic in	nstallation of vibrating-wire piezome	ters Coordinated	laboratory testing progra	m of soil and rock
	pressure testing and in	estigation report, and designed calc	ulations associated	with NRCS SITES modeling	ng of existing and
į	samples, prepared inv	llways. Fee: \$999K (est.)	u u () () 15 u 55		
	(1) TITLE AND LOCATION (City a	and State)			RICOMPLETED
!	New Creek Site 14 Da			PROFESSIONAL SERVICES	CONSTRUCTION (if appl.) 2013
ļ	MCM CIECK SILC 14 DO	,	Section F #2	2013	2013
i	(2) DDIEE DESCRIPTION (Reaf	scope, size, cost, etc./ AND SPECIFIC RCLE		Check if projec	performed with current firm
	NPCS Project Geningi	st for subsurface investigation and v	ibrating-wire piezo	ometer installation inspec	tion for 114-foot-high,
Ь.	040 foot long zoned s	earth embankment dam. Drilling pro	ogram included per	netration testing, borehol	e falling head
		and NX rock coring. Assisted in inspe	ction of boreholes	advanced through dam's	central clay core
	permeability testing,	cations required by ER-1110-1-1807.	Configured horel	nole logging software, pre	pared site investigation
	conforming to specific	ratory testing program, researched	nacionic literature	and reviewed results of	subsurface investigation
	report, prepared labo	survey. Determined location of Kit	Holick fault and fin	alized geologic mapping	of site. Fee: \$2.4M
	(1) TITLE AND LOCATION (City	and State)	tichek hadit and in	(2) YEA	IV OOM LETED
	Lost River No. 16 Dan			PROFESSIONAL SERVICE	
	LUST KIVET NO. 10 Dan	ii, italay dodniy, iii	Section F #	6 2015	N/A
	(A) PRIET RECORDED ON 18-1-1	scope, size, cost, etc.) AND SPECIFIC ROLE		☑ C'neck if projec	x performed with current firm
	AUDIC Staff Coologist	for geotechnical investigation of not	tential dam. Inspe	cted standard penetratio	n testing of overburden
C.	and NV wireline rock	coring logging materials in accordar	nce with U.S. Burea	au of Reclamation's Engin	eering Geology Fleid
	Manual Inspected si	ngle- and double-packer water-pres	sure testing of bed	rock, determining target	effective pressures and
	Manual Inspected St	asured bedding and cleavage orient	ation from rock ou	tcrop upstream of propos	sed dam axis.
	gauge pressures. We	gs and collected soil samples for lab	oratory analyses.	Reviewed geological litera	ture and prepared
	Completed test pit io	aphy, soils, stratigraphy, and structu	eral geningy for site	investigation report. Fe	e: >\$2M
	(1) TITLE AND LOCATION (City	apny, soils, stratigraphy, and structu	irai geology for sice	(2) YE	NO OTHER PERSON
	Hibernia Dam, Chest			PROFESSIONAL SERVICE	
	Hibernia Dam, Chest	er County, FA	Section F #	8 Ongoing (2016)	N/A
		A LAND OFFICER POLE		Check if proje	ct performed with current firm
	(3) BRIEF DESCRIPTION (Brief	f scope, size, cost, etc.) AND SPECIFIC ROLE ogist for subsurface exploratory pro	gram for existing f	4 5-foot-high, 700-foot-lo	ong zoned earth
d.	CCWRA. Project Geol	ogist for subsurface exploratory pro Inusually high phreatic levels observ	ed in evicting case	grande niezometers pron	noted a concern over
- 1	embankment dam. U	of dam. Provided oversight of soil i	and rock campling	methods during drilling o	nerations and
	integrity and stability	tion. Procured and installed instrum	and ruck sampling	ided client with instruction	n and maintenance of
	piezometer construc	tion. Procured and installed instrum	lentation and prov	igation and piezometer in	stallation plan
	instrumentation. Est	ablished cost estimate for proposed	Supsurface invest	d information to client	See: \$2.5M (est.)
	Monitored and analy	zed historic and current plezometric	aata and provide	u mnormation to client. (2) YE	AR COMPLETED
	(1) TITLE AND LOCATION (C/t)			PROFESSIONAL SERVICE	S CONSTRUCTION (# appl.)
	Elkwater Fork Dam,	Randolph County, WV	Section F	#7 2011	2011
				Check if arole	ect performed with current firm
e.	(3) BRIEF DESCRIPTION (Brie	of scope, size, cost, etc.; AND SPECIFIC ROLE gist for geotechnical investigation of	new 123-foot-tall	dam Measured bedrock	discontinuity orientation
	NRCS. Project Geolog	gist for geotechnical investigation of	Deviewed declering	al literature and prepare	d a summary of
	from rock outcrop ex	cosures at the proposed dam axis. Stratigraphy, and structural geology	veniewen RegioRig	ration report Fee \$1 EM	
	1 physiography soils s	stratigranny and structural geology	tor the site investi	Rariott Lehotr Leer 31.2M	

	E. RESUN	MES OF KEY PERSO	ONNEL PROPOSED tion E for each key p	FOR THIS CONTRACT	
	NAME	13. ROLE IN THIS CON	TRACT	14. YEARS	EXPERIENCE
	therine E. Sharpe, AICP	NEPA – Lead; Ed	onomics/GIS	a. TOTAL 15	b. WITH CURRENT FIRM
	FIRM NAME AND LOCATION (City and State) Gannett Fleming , Harrisburg, PA				15
16.	EDUCATION (DEGREE AND SPECIALIZATION)		17. CURRENT PROFES	SIONAL REGISTRATION (STATE A	ND DISCIPLINE)
BA	/English, Minor in Environmental Economic	S	AICP	·	,
18.	PS/Environmental Management OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organ	fat		<u> </u>	
Pro	ofessional Organizations: American Plannin	rzations, Training, Awards, P Association (APA	etc.) 1): American Instit	uto of Cortified Diame	(ALCD)
		19 RELEVA	NT PROJECTS	ute of Certified Planners	(AICP)
	(1) TITLE AND LOCATION (City and State)			(2) YEAF	R COMPLETED
	FRS 7 and 13A, Environmental Assessmen	nt and	Section F #3	PROFESSIONAL SERVICES	
	Watershed Plan, Upper Brushy Creek Wa	tershed,	Section F #3	2005	N/A
	Williamson County, TX				
a.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SP	PECIFIC ROLE		Check if project	performed with current firm
	NRCS. Environmental Economist conducting	flood protestion f	alysis to determin	e whether to rehabilitate	e or remove two aging
	dams. Quantified benefits of maintaining	stimate banafita a	or agriculture, res	idential, and commercial	properties, and roads
	and bridges. Used NRCS URB1 model to e sediment pool behind one of dams provid	ed including rocro	or continuing reside	ential flood protection.	Quantified benefits that
	adjacent properties. Analysis identified er	reineering alterna	ation, water suppi	y, stormwater detention	i, and aesthetic value to
	(1) HILE AND LOCATION (Gity and State)		tive to maximize n	(2) YEAR	COMPLETED
	Environmental Assessment (EA) and Water	ershed Plan,	0. 41 5.05	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	White Tanks FRS No. 4, Maricopa County,		Section F #4	2008	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SP	ECIFIC ROLE	_	Check if project	performed with current firm
	Flood Control District of Maricopa County.	Environmental Ec	onomist assisting	in preparation of NRCS u	work plan and EA for
b.	renabilitation of White Tanks FRS No. 4. C	onducted cost-bei	nefit analysis to de	termine whether to reh	abilitato or romavo
	aging White Tanks Dam. Quantified benef	its of maintaining	flood protection f	or agriculture, residentia	ll, commercial, and
	institutional properties; roadways; and othersidential flood protection. Applying identification	tified and incoming	Used NRCS URB1	model to estimate bene	efits of continuing
	residential flood protection. Analysis iden	uneo engineering	alternative to max	rimize net benefits. Assi	sted in developing
	alternatives for project, including no action current criteria, and the National Economic	r, decommissionii r Develonment alt	ernative Foot \$1.	dam, the renabilitation (of the dam to meet
	(1) TITLE AND LOCATION (City and State)	o Development an	emative. ree. \$1.	the same of the sa	COMPLETED
	Pre-Planning Concepts Study for Saddleba	ick FRS		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	Rehabilitation Project, Maricopa County		Section F #4	2013	N/A
c.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPE	ECIFIC ROLE		Check if project r	performed with current firm
	Flood Control District of Maricopa County.	Economist prepar	ing an economic a	ssessment of flood dame	ages to infractructure
	and agriculture in the Too-Aeat storm even	it under With Dam	เ and Without Dan	n conditions, based on El	O-2D modeling
	conducted for the project. Purpose of anal	lysis was to provid	le quantitative inp	ut on potential damages	to use in conceptual
	development of rehabilitation alternatives. (1) TITLE AND LOCATION (City and State)	. Fee: \$455K			
	Fredonia FRS Work Plan and EA, Coconino	County A7		PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)
	The state of the s	County, AZ	Section F #5	2009	N/A
ľ	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPE	CIEIC POLE		N	
.	Town of Fredonia. Assistant Project Manag	er/Environmental	Fconomist assistir		erformed with current firm
d.	for the rehabilitation of the Fredonia FRS.	Conducted a cost-	benefit analysis to	determine the economi	is impact of a series of
Ī	nood events on the town of Fredonia. Use	d Marshali Valuati	on Service cost da	ta to estimate structure	and content values of
	downstream property. Used GIS analysis a	nd the NRCS URB1	l Model to measur	e the hanafits of mainta	ining flood protection
	ioi agriculture, residentiai, commerciai, and	d institutional pro	perties: roadways:	and other infrastructure	Action alternative
	retained for defauled study consisted of cor	verting dam to le	vee to maintain 10	00-year flood protection.	Fee: \$98K
	(1) The same and a same control of the control			(2) YEAR (COMPLETED
	EA and Watershed Plan, Powerline, Vineya Rittenhouse FRS, Maricopa County, AZ	ard, and	Section F #4	PROFESSIONAL SERVICES 2013	CONSTRUCTION (if appl.)
-			00000111 #4		N/A
е.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPE	CIFIC ROLE Project Manages/F	nvironmant-15	Check if project po	erformed with current firm
	Flood Control District of Maricopa County. F plan and EA for rehabilitation of three dams	Toject Manager/E	:	nomist assisting in prepa	aration of NRCS work
	flood events on downstream area. Used GI	S analysis and NR	CS [[RB1 Model +c	measure bonofite of an	mpact of series of
	protection for agriculture, residential, comm	nercial, and institu	utional properties	and roadways, Foot \$40	intaining flood
		Gran, and matri	adonal properties;	and roadways. Fee: \$10	DK

	E	RESUMES OF KEY PERS (Complete one Se	with Efforeach 667 best	on:	esurvo-
	AME	13 ROLE IN THIS COL	YTRACT	14. YEARS EXP	D WITH CURRENT FIRM
	ven J. Wittig, CE	INSTA	<u></u>	9	7
	RM NAME AND LOCATION (City and State)				
	Eannett Fleming, Valley Forge, P DUCATION (DEGREE AND SPECIALIZATION)	<u> </u>	17 CURRENT PROFESSIO	NAL REGISTRATION (STATE AND D	ISCIPLINE)
	Natural Resource Management		Certified Ecologist		
-,			e-RAILSAFE Badge		
			Adult First Aid		
			Adult CPR/AED		
a. C	OTHER PROFESSIONAL QUALIFICATIONS (Publice stressional Organizations: Ecological	ations, Organizations, Training, Award	s, etc.) iety of Wetland Scient	rists	
rc	itessional Organizations: Ecologica	19. RELEV	ANT PROJECTS		
-	(1) TITLE AND LOCATION (City and State)			PROFESSIONAL SERVICES	CONSTRUCTION (f appl.)
	Indefinite Delivery/Indefinite Qu	antity Contract – Lost		2015	N/A
	River Site 16 Dam, Lost City, Har	dy County, WV	Section F #6	2013	.,,,,
	The same and appropriate the same area	are LAND SDECIEIC POLE		Check if project per	formed with current firm
3	NRCC Environmental Scientist re	sponsible for leading the	field effort to identify	and delineate waterway	s and wetlands
	according to the Regional Sunnle	ment to the Corps of Eng	ineers Wetland Deline	eation Manual: Eastern I	viountains and
	Piedmont Region (Version 2.0).	Delineation efforts encon	npassed the 235-acre	Lost River Site 16 study a	rea and the 14-acre
	Edwards Run offsite mitigation a	rea located in Hampshire	County, Contract Fee	:>\$2M	
_	(1) TITLE AND LOCATION (City and State)	ica located ili ilanipami		- 164 TENOVE	
	Various Dam Safety and Water I	Resources Engineering	CV F 40	PROFESSIONAL SERVICES Ongoing (2016)	CONSTRUCTION (if appl.) N/A
	Assignments, Struble Dam Trend	h Drain, Chester County	Section F #8	Ongoing (2016)	NA
Ь.	PA,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•		
D		etc.) AND SPECIFIC ROLE		Check if project pe	rformed with current firm
	CCWRA. Environmental Scientist	responsible for performi	ng wetland delineatio	n and preparing a techni	cal memorandum for
	an area proposed for a replacem	ent dam trench drain. Fe	e: \$2.5M (est.)		
	(1) THEE AND LOCATION (City and State)			PROFESSIONAL SERVICES	CONSTRUCTION (# appl.)
	Hurricane Sandy Contractor Ser	vices, Multiple Municipa	lities, NJ	Ongoing (2016)	N/A
					erformed with current firm
6.	III. Alessa Jamania Damartmaant ot Emilia	onmental Protection, Fou	rironmental Scientist r	esponsible for performin	g Tier 2 NEPA
	evaluations of homes damaged	hy Superstorm Sandy as I	part of NIDEP process	es to obtain federal funds	s. Also responsible fo
	performing field reviews associa	tod with Tier 2 NEPA eva	luations Fee: \$1.7M (est.)	
_	(1) TITLE AND LOCATION (Cay and State)	ted with her 2 Nei A eva	100000110111011111111111111111111111111	567 1407013	OMPLETED.
	S.R. 0052 Relocation, Chester C	ounty, PA		PROFESSIONAL SERVICES	CONSTRUCTION (# appl.) 2013
	[]			2012	1
	(3) BRIEF DESCRIPTION (Brief scope, size, cos	tt, etc.) AND SPECIFIC ROLE		Check if project ∞	erformed with current firm
d.	Languaged Cardons Environmen	ntal Scientist assisting wit	h NEPA document re-	evaluation for the reloca	tion of a roduway.
	Assisted in performing fieldwork	c and coordination for a \	JSACE Jurisdictional D	etermination. Also assist	ted with temporary
	seeding construction specification	ons. Responsible for per	forming and assisting t	with wetland mitigation i	leidwork, report
	preparation, and report editing.	Fee: \$468K			COMPLETED
	(1) TITLE AND LOCATION (City and State)		5.11- · O · · ·	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.
	Delaware County Bridge Replac		e Bridge Over	2012	Ongoing (2015)
	Railroad, Delaware County, PA			57	- day of the second firm
е	(3) BRIEF DESCRIPTION (Brief scope, size, co	st, etc.) AND SPECIFIC ROLE		Check if project p	erformed with current firm
	Pennsylvania Department of Tro documentation for a bridge rep	insportation (PennDOT),	District 6-0. Environm	ental Scientist responsible	tormination
	desumentation for a bridge ren	lacement nerforming we	etiand delineation and	DOACE Jurisaictional Dei	LETTINIALION
	application, and assisting with a	lacerticitt, perioriting or		Name Cart CA CAA lank 1	

	E. RESUME	S OF KEY PERSO	ONNEL PROPOSED F	OR THIS CONTRACT	
	NAME	13. ROLE IN THIS CON NEPA	TRACT	a. TOTAL	PERIENCE b. WITH CURRENT FIRM
				19	15
15.	FIRM NAME AND LOCATION (City and State)				
16	Gannett Fleming, Valley Forge, PA EDUCATION (DEGREE AND SPECIALIZATION)				
BS.	Environmental Biology			ONAL REGISTRATION (STATE AND I	DISCIPLINE)
	/Environmental Pollution Control		First Aid		
18. (THER PROFESSIONAL QUALIFICATIONS (Publications, Organiza	tions Training Awards	CPR-Adult	<u> </u>	
Pro	ofessional Organizations: Advancing Women	in Transportation	on (AWT), 2015-pres	ent: Transportation Rese	arch Board (TRR)
20	15-present		(ent) Transportation Nesc	arcii board (TNB),
		19 RELEVA	NT PROJECTS		
	(1) TITLE AND LOCATION (City and State)			(2) YEAR C	
	Indefinite Delivery/Indefinite Quantity Cor	ntract – Lost		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	River Site 16 Dam, Lost City, Hardy County,	, WV	Castina F #0	2015	N/A
		_	Section F #6		
a.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPEC	CIFIC ROLE	· · · · · · · · · · · · · · · · · · ·	Check if project per	formed with current firm
	NRCS. Senior Environmental Scientist identi	fying and deline	ating waterways an	d wetlands according to t	he Regional
	Supplement to the Corps of Engineers Wetla	and Delineation	Manual: Eastern M	ountains and Piedmont F	Region (Version 2.0)
	Delineation efforts encompassed the 235-ac	cre Lost River Sit	te 16 study area and	the 14-acre Edwards Ru	off-site mitigation
	area located in Hampshire County. Contract	t Fee: >\$2M	•		
i	(1) TITLE AND LOCATION (City and State)			(2) YEAR CO	OMPLETED
	Hibernia Dam Wetland Mitigation Monitor	ing, Chester	D E #6	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	County, PA		Section F #8	Ongoing (2016)	N/A
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPEC	OFFIC ROLE		Check if project per	formed with current firm
	Chester County Water Resource Authority. E	nvironmental So	cientist for the wetla	and mitigation field monit	foring and survey at
	Chambers take in Hibernia Park. The project	t involved cond	ucting postconstruc	tion monitoring of the cre	eated wetlands and
_	addressing permit compliance issues. Fee:	\$2.5M (est.)		-	
	(1) TITLE AND LOCATION (City and State)			(2) YEAR CO	
	Gilboa Dam Reconstruction, Gilboa, NY			PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
_	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPEC			2014	2014_
C.	New York City Department of Environmental	I Protection Env	dronmontal Calcutin	Check if project per	formed with current firm
ı	New York City Department of Environmental	coilbune Dutie	nronnentai Scientisi	t assisting on environmer	ital studies involving
-	wetlands related to the rehabilitation a dam Gannett Fleming offices. Fee: \$22M	spiliway. Dutle	s also included coor	dination with team mem	bers from various
	(1) TITLE AND LOCATION (City and State)				
- 1	Valley Forge National Park Water Main Res	toration Delaw	Into County DA	(2) YEAR CO PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
ļ		toration, Delaw	rare County, PA	Ongoing (2015)	Ongoing (2015)
,	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPEC	IFIC ROLE		Check if project per	formed with a great E-
d.	Aqua Pennsylvania. Environmental Manager	for environmer	ntal activities involvi	ng permitting and NFPA	annroval through the
	National Park Service, natural resource and o	cultural and hist	oric investigations.	and agency coordination	The project
1	involves the replacement of a 24-inch water	main in PA Rou	te 23 and PA Route	252 and the crossing of)	/alley Crook poor
	wasnington's neadquarters. Fee: \$3.9M (es	st.)		===) and the crossing of	rancy creek flear
	(1) TITLE AND LOCATION (City and State)			(2) YEAR CO	MPLETED
	Water Main Restoration, Valley Forge Natio	nal Historical P	ark, Chester	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
- 1	County, PA			2010	Ongoing (2015)
Ĺ	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECI				
e	(4) 5.41. BESSIAI HOM (Brief Scope, Size, cost, etc.) AND SPECI	FIC ROLE		Check if project perf	ormed with current firm
) .	Aqua Pennsylvania. Environmental Manager	for environmen	ntal activities involvi	Check if project perfing NEPA approval (CEE) to	brough the National
).	Aqua Pennsylvania. Environmental Manager Park Service, natural resource investigations, construction oversight. Fee: \$3.9M (est.)	for environmen	ntal activities involvination, bioengineeri	ng NEPA approval (CEE) ti	brough the National

ayı.	COLORS CARROLTER TO AND A RESUM	(Complete one Sec	NNEL PROPOSED For	son.)	
12. NA		13. ROLE IN THIS CONT Public Involvem	RACT	a. TOTAL	b. WITH CURRENT FIRM
	nelle A. Brummer, AICP	Public Involvent	ent	17	13
	RM NAME AND LOCATION (City and State)				
	CATION (DEGREE AND SPECIALIZATION)		17. CURRENT PROFESSIO	NAL REGISTRATION (STATE AND	DISCIPLINE)
	/Landscape Architecture		Certified Planner		
MIA	./Landscape Architecture. Watershed Stev	vardship Option			
	THE PROPERTY OF A LIFE CATIONS (Publications Organ	izetione Training Awards	etc.)	Contral Section Central	Section Council -
Prot	essional Organizations: American Plannin	g Association (AF	A), AFA FEIIISYIVAIII	Contrar Section, Gentra	
Prot	essional Planner at-Large Member	19 RELEVA	NT PROJECTS		
	(1) TITLE AND LOCATION (City and State)			(2) YEAR 0 PROFESSIONAL SERVICES	OMPLETED CONSTRUCTION (if appl.)
1	Comprehensive Master Plan Update, Par	kersburg, WV		2010	N/A
ŀ	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	PECIFIC ROLE		Check if project pe	orformed with current firm
	City of Barkershurg, Project Manager and	Lead Planner for	the technical service	es of a comprehensive plant	an, evaluating current
	conditions, alternatives, goal developmen	nt. recommendati	ons, and implement	ation strategy, with an ei	mphasis on land use,
а.	as well as public outreach. The planning	effort updated the	e City's 2001 compre	enensive plan after the co	impletion of upgraves
	to U.S. Route 50 from the Ohio River to I-	77. The rural city	's declining populati	on and employment figu	res nad been casting a
	dark shadow on its projected future. The	alternatives phas	e offered three opti	ons for future developm	ent based on
Ì	projected trends, applied local and region	nal policy, and citi	zen issues and best	practices. Based on the s	v slong the Ohio
	the plan outlines strategies to change tre	nds toward a mor	e prosperous, anon	Japie, and Sustamable cit	y mong the onlo
	River. Fee: \$120K (1) TITLE AND LOCATION (City and State)				COMPLETED
ĺ	Berkeley County Comprehensive Plan, 8	erkeley County, V	vv	PROFESSIONAL SERVICES 2006	CONSTRUCTION (if appl.) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND 5				erformed with current firm
b.	Berkeley County Planning Commission. Pl	roject Planner resi	ponsible for data co		
	comprehensive plan addressed land use,	infrastructure, an	d public service issu	es arising from growth p	ressures with tools for
	guiding growth to serviceable locations a	nd for higher qua	ity design and cons	truction. Fee: \$362K	
	(1) TITLE AND LOCATION (City and State)	_		(2) YEAR PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (# appl.)
	Interchange Development Ordinance, W	lood County, WV		2011	N/A
ĺ	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPECIFIC ROLE			erformed with current firm
	Washington Suburban Sanitary Commiss	ion. Project Mana	ger responsible for t	the preparation of an Int	erchange Development
C.	Ordinance, applicable to the highway int	erchanges of I-77	and Corridor D (U.S	. Route 50) within the Co	unty's jurisaiction.
!	The ordinance establishes standards for	any and all develo	pment, focusing on	safe access and circulation	on, consistency in
	setbacks and site design, managed signa	ge and lighting, co	nservation of natur	al character, and minima	I impact to sensitive
	natural resources. Provisions and standa	ards were drawn t	rom the model ordi	nance for the 1-99 interci	idilges isi cestiti ai
	Pennsylvania and the City of Parkersburg	s ordinances. Fee	5: 211K	(2) YEAR	COMPLETED
	County Comprehensive Plan, Bradford	County, PA.		PROFESSIONAL SERVICES	CONSTRUCTION (# appl.)
				2005	N/A performed with current firm
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND Bradford County Board of Commissioner.	SPECIFIC ROLE	and Bublic Involver	Check if project	sible for preparing the
d.	vision and plan for a Northern Tier muni	s. Project Planner	sement was focused	on County resources: ho	wever, the regional
u.	context of the Northern Tier and New Yo	ork municinalities	was also considered	. The plan was intended	to address business
	attraction and retention, land use and tr	ansportation rela	tionships, and the co	onservation of natural an	d cultural rural
	character, among other themes. Public	involvement oppo	rtunities included a	planning advisory comm	ittee, community
	information stations, focus groups, and	a project website.	Fee: \$169K		
	(1) TITLE AND LOCATION (City and State)			(2) YEAR PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)
	County Comprehensive Plan Update, So	omerset County, F	PA	2003	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPEC!FIC ROLE		☐ Check if project	performed with current firm
	Somerset County Roard of Commissione	rs. Project Plannei	r and Public Involve	ment Coordinator respon	sible for the
e.	development of a comprehensive plan u	ipdate for a south	western Pennsylvar	ia municipality. Planning	g emorts rocused on
	recent strategic visioning efforts and en	iphasized econom	iic development, tra	nsportation corridors, wa	ater resources, and
	rural recreation. Public involvement high	thlights included C	County planning info	rmation stations (project	: kiosks located and
	updated throughout the county), children	en's visioning activ	ities, and local offic	ials' workshops tocused	on continued
	intermunicipal dialogue and implement	ation. Fee: \$1201	(

		E. RESUMES O	F KEY PERSO	NNEL PROPOSED FO	R THIS CONTRAC	T	
12.	NAME	13. ROLE IN THIS CONTRAC	mplete one Secti T	on E for each key pers	on.)	- 44	VELDO EVELDIENCE
Cr	aig S. Shirk, AICP, ENV SP	Social Environment		ources	a. TOTA	14.	YEARS EXPERIENCE b. WITH CURRENT FIRM
	FIRM NAME AND LOCATION (City and	ľ			22		19
Ä	Gannett Fleming , Harris	chura DA					
	EDUCATION (DEGREE AND SPECIAL)	ZATION)		17. CURRENT PRÖFESSION	IAI DECISTRATION (ST.	ATE AND	DISOIBLAND
BΑ	/Geoenvironmental Studie	es		AICP	WE REGISTRATION (ST	ATE ANL	DISCIPLINE)
_M:	S/Environmental Science			Envision™ Sustaina	pility Professional	l (ENV	(SD)
18. Dec	OTHER PROFESSIONAL QUALIFICATI	ONS (Publications, Organizations	s, Training, Awards, et	te)		12100	<u> </u>
PI	ofessional Organizations: /	APA; AICP; Pennsylvani					
	(1) TITLE AND LOCATION (City and	State	19. RELEVAN	IT PROJECTS			
	Review of NEPA Complia		for the NorthN	/let (PolyMet)	PROFESSIONAL SER		COMPLETED CONSTRUCTION (if appl.)
	Mine Project, MN			inci (i diyinici)	2013		N/A
	(3) BRIEF DESCRIPTION (Brief scop	e, size, cost, etc.) AND SPECIFIC	C ROLE		Check if	nmiect n	erformed with current firm
a.	U.S. Environmental Prote	ection Agency (U.S. EPA	A), Region 5. F	Project Manager ma	naging NFPA and	techr	sical hydrological
	services to support the U	J.S. EPA, Region 5 in th	ne review of a i	copper sulfide ore n	nine and processi	no nro	piect Gannett Fleming
	provided expertise in nyo	drology and hydrogeol	logy to assist L	J.S. EPA in evaluatio	n of groundwater	and o	surface water
	interconnections and gro	oundwater contaminan	nt transport. (Our firm provided te	chnical review of	NFPA	and supporting
	documentation to assist	U.S. EPA in its role as a	a cooperating	agency for final envi	ronmental impac	t stat	ement (EIS). Fee: \$65K
	(1) The same book that tony and t	Olaie)			(2)	YEAR (COMPLETED
	Mississippi River Reintro Assumption, and Lafouro		atourche, Asce	ension,	PROFESSIONAL SER 2007	VICES	CONSTRUCTION (if appl.) N/A
	(3) BRIEF DESCRIPTION (Brief scope						
	U.S. Environmental Prote	s, size, cost, etc.) AND SPECIFIC ection Agency Region (; KULE 6 Assistant Dr	rainet Manager and	Check if p	project p	erformed with current firm
b.	development of an enviro	onmental impact state	ement analyzin	oject ividilager allu	selsior Environme	entars	scientist for
	diversion and associated	dredging along 55-mile	le segment of I	Ravou Lafourche Ir	acts of increasing	existi	ing freshwater
	ecological role of Bayou L	afourche in developm	nent and nouri	shment of wetlands	lvestigation was i	nteno	t with Gulf of Mavice
	Project involved substant	ial water quality, threa	atened and en	idangered species in	ommunity and o	umuk	t with Gull Of Mexico.
	issues and concerns. EIS	was developed based	on detailed 30) percent engineerir	ig design complet	ted hy	project sponsors and
	supplemented by addition	nal original research ai	nd field reviev	vs of study area. Fe	e: \$410K	ieu by	project sponsors and
	(1) TITLE AND LOCATION (City and S	State)				YEAR (COMPLETED
	Upper Dauphin, Cumberl	and, and Perry Count	y Park-and-Ric	de Study,	PROFESSIONAL SERV	/ICES	CONSTRUCTION (if appl.)
	Dauphin, Cumberland, ar				2010		N/A
	(3) BRIEF DESCRIPTION (Brief scope), size, cost, etc.) AND SPECIFIC	ROLE	_	Check if p	roject pe	erformed with current firm
C.	Tri-County Regional Plann	ing Commission. Envir	ronmental Pla	nner for preparation	of environment	al dat	a collection, analyses,
	and documentation for a	regional park-and-ride	e study. Enviro	onmental data colle	ction activities co	nsiste	ed of gathering
	available GIS data layers f	or various natural, cui	iturai, and soci	al environment reso	ources. Results in	lentifi	ed types of detailed
	environmental studies (i.e planning moves forward i	nto project developme	esources, Pha	se i environmental s	ite assessments)	requi	red for each site as
	(1) TITLE AND LOCATION (City and St	tate)	ent and NEPA	process. ree: \$677k		VEADO	OMPLETED
	Greencastle Area Water S	System Improvements	s, Greencastle	. PA	PROFESSIONAL SERV		CONSTRUCTION (if appl.)
- 1					2003		N/A
-	(3) BRIEF DESCRIPTION (Brief scope,	, size, cost, etc.) AND SPECIFIC I	ROLE		Check if p	roject pe	rformed with current firm
اد	Greencastle Area, Franklir with USACE, Baltimore Dis	strict FA was necossa	rity. Environm	entai Project Manag	ger for preparatio	n of a	n EA in coordination
d.	with USACE, Baltimore Dis Development Act of 1992	for these local water of	system improv	ce to provide fundi	ng under Section	313 0	f Water Resources
j	future industrial, commer	cial, and husiness ente	ernrises adiace	ent to Evit E close U	is needed to satis	ity an	ticipated needs of
	new booster pumping stat	tion and approximately	erprises aujace ly 3 300 LE of r	ent to exit 5 along I-	si. Proposed imp	orove	ments consisted of
	potential impacts upon Gr	reencastle Historic Dist	trict and const	ruction-related ony	ironmontal impa	issue	s analyzed were
	the borough. Assessed ha	itural and socioeconor	mic impacts an	nd prepared environ	mental documon	tation	a residential area of
T	(1) THEE YEAR COOK HOM (ON) WHO ON	ate		proporce cityiloff	(2)	YEAR CO	DMPLETED
	Water System Improvement	ents, Laurens County,	SC		PROFESSIONAL SERV		CONSTRUCTION (if appl.)
<u> </u>	(3) BRIEF DESCRIPTION (Brief scope,	size cost etc AND SPECIFIC F	POLE		2003		N/A
e.	U.S. Environmental Protec	tion Agency. Region 4	. Project Mana	ger for the develop	Check if pr	oject per	formed with current firm
~·	improvements. The project	ct proposed the replac	cement of 15 1	l miles of existing w	ater main along 9	L bow	used water system
	pressure and distribution	problems in this rural a	area. Issues co	entered on the pote	ntial for seconda	ry imr	sacte associated with
	ruture development aroun	ia Lake Greenwood, a	major regiona	il recreational lake.	FA was complete	d to f	ulfill requirements
	for providing State and Tri	bal Assistance Grant fo	unding to the	Laurens County War	er and Sewer Co	mmis	sion Fee \$7K

1.01	E. RESU	MES OF KEY PERSO	ONNEL PROPOSED F	OR THIS CONTRACT	es totals was
12. NA	ME	13. ROLE IN THIS CON		14. YEARS EXF	PERIENCE b. WITH CURRENT FIRM
Stev	en C. Smith, WPIT	Natural Resour	ces/wetland	14	14
	RM NAME AND LOCATION (City and State) TRANSPORTED HARRISDURG, PA	<u> </u>			
	DUCATION (DEGREE AND SPECIALIZATION)			ONAL REGISTRATION (STATE AND D	DISCIPLINE)
BS/G	Geoenvironmental Studies THER PROFESSIONAL QUALIFICATIONS (Publications, Orga	enizatione Training Awards	Wetland Profession	onal in Training	
Prof	essional Organizations: Society of Wetla	and Scientists			
		19 RELEV	ANT PROJECTS	(2) YEAR CO	OMPLETED
	(1) TITLE AND LOCATION (City and State)	n Broston		PROFESSIONAL SERVICES	CONSTRUCTION (# appl.)
ļ	Upper Deckers Site 1 Dam Rehabilitatio County, WV	in, Preston	Section F #1	Ongoing (2016)	N/A
a.	THE PERSON STICKLY COME SIZE COST STOLLAND	SPECIFIC ROLE	ible for wetlend	Check if project per	formed with current firm
1	NRCS. Environmental Scientist and Perm development of a wetland and waterwa	nit Coordinator res	ponsible for welland	ranu waterway identineat	federal
l	environmental permits for the rehability	y mitigation pian, a	45-foot-high zoned	embankment dam. Fee:	\$999K (est.)
	(1) TITLE AND LOCATION (City and State)	ation or an existing	43 Tool IIIBII Zerroa	(Z) TEAR O	ONIFECTED
	Nesbitt Dam Rehabilitation, Lackawann	na County, PA		PROFESSIONAL SERVICES 2012	CONSTRUCTION (# appl.) 2012
Ì	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPECIFIC ROLE			rformed with ourrent firm
Ь.	Pennsylvania American Water. Environn	nental Scientist res	ponsible for conduc	ting wetiand and waterwa	ay or the Neshitt Dam
	identification/delineation and stream ra rehabilitation. Other responsibilities inc	apid bioassessmeni	s in support or perion	niapplications required in application of (0.25 acres of on-site
	palustrine wetlands, preparing USACE S	ection 404 and PA	DEP Chapter 105 Da	m Permit Applications, an	d coordinating with
	the regulating agencies. Fee: \$3.7M	ection 40 rana rx.			
	(1) TITLE AND LOCATION (City and State)			(2) YEAR C	OMPLETED CONSTRUCTION (if appl.)
	Rehabilitation of Watres Dam, Lackawa	anna County, PA		2008	2008
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPECIFIC ROLE	ible for conduc		arformed with current firm
C. '	Pennsylvania American Water. Environt delineation, surveys for timber rattlesn	mentai Scientist re:	sponsible for conduct	sments in support of pern	nit applications
	required for the Watres Dam rehabilita	tion Also prepare	d USACE Section 404	PADEP Chapter 105 Dan	n Permit Applications
	and coordinated with the regulating ag	encies. Fee: \$992	K		
	(1) TITLE AND LOCATION (City and State)			(2) YEAR (PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	George B. Stevenson Dam Rehabilitation	on, Sinnemahonin	g State Park,	2012	N/A
	Cameron County, PA	D ODEOUE'S DOLE		Check if project o	erformed with current firm
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) ANI Pennsylvania Department of General Se	ervices. Environme	ntal Scientist for the	identification and delinea	ation of wetlands and
	waterways immediately downstream 0	f the existing dam	to support the planr	ling and permitting of the	proposed dam
	rehabilitation. Other responsibilities in	cluded preparing (JSACE Section 404/F	ADEP Chapter 105 Dam P	ermit Applications and
	coordinating with the regulating agenc	ies. Fee: \$780K			COMPLETED
	(1) TITLE AND LOCATION (City and State)		eien Obaca luzarna		CONSTRUCTION (if apol.)
	Pikes Creek Dam Rehabilitation Project	x – Preliminary De	sign Phase, Luzerne	Ongoing (2016)	N/A
	County, (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AN	D SPECIFIC ROLE		Check if project p	erformed with current firm
	Pennsylvania American Water Environ	mental Scientist re	sponsible for condu	cting the fieldwork and pr	eparing the wetlands
e.	and waterways identification and delin	eation report for t	he Pike Creek Dam s	tudy area. Coordinated v	vith rederal and state
	agencies regarding the potential for the	reatened and/or e	ndangered species a	nd initiated agency coord	ination in support of
	project authorization. Lead permit coo	ordinator responsik	ole for the document	tation of proposed impact	s, aiternatives
	considered and efforts made to avoid a	and minimize distu	rbances, and prepar	resulting from the project	t Fee: \$1.85M (est.)
	acres of palustrine wetlands to compe	nsate for unavoida	pie wetiand impacts	resulting from the projec	t. 1 de. 91.05(4)

	E. RESU	JMES OF KEY PERSO	NNEL PROPOSEI	FOR THIS COM	ITRACT	
12.	NAME	(Complete one Sec	BACT BACT	person.)	44 345 350	
Da	vid H. Graff, PWS, CE, CWB	Natural Resource		a. TOTAL	14. YEARS EX	b. WITH CURRENT FIRM
		Delineation	•	16		9
15,	FIRM NAME AND LOCATION (City and State)					
16	Gannett Fleming, Harrisburg, PA EDUCATION (DEGREE AND SPECIALIZATION)					
	/Environmental Studies		17. CURRENT PROFES	SSIONAL REGISTRAT	ION (STATE AND	DISCIPLINE)
	AEd/Environmental Studies		Professional We			
	ica, cirvironnichtai Staales		Certified Ecolog			
			Certified Wildlif			
18.	OTHER PROFESSIONAL QUALIFICATIONS (Publications, Org	ganizations, Training, Awards,	e-RAILSAFE Bad			
Pro	ofessional Organizations: The Wildlife Soc	ciety; Society of Wet	land Scientists; E	cological Societ	v of America	1
		19 RELEVA	NT PROJECTS			
	(1) TITLE AND LOCATION (City and State)	1 4-1				OMPLETED
	New Creek – Whites Run Sub-Watershe		Section F #2		NAL SERVICES 013	CONSTRUCTION (if appl.)
	River Watershed, New Creek Site 14 Re	habilitation	30000011 #4	- - 20	,13	2013
	Project, Grant County, WV					
a.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPECIFIC ROLE			Check if project pe	normed with current firm
	NRCS. Senior Environmental Scientist re	sponsible for design	ing a wetland mi	tigation plan to	lessen wetla	and and stream losses
	associated with the rehabilitation of the	New Creek dam str	ucture. Mitigatio	on components	consisted of	restoring and
	creating 3.5 acres of palustrine-emerger	it and scrub-shrub w	etlands and crea	iting 887 LF of	stream to rea	ach Linton Creek. The
	plan was reviewed and approved by the (1) TITLE AND LOCATION (City and State)	NRCS and U.S. Arm	/ Corps of Engine	ers. Fee: \$3M		
	Indefinite Delivery/Indefinite Quantity	Contract - Lost		PROFESSION	(2) YEAR C	OMPLETED CONSTRUCTION (if appl.)
	River Site 16 Dam, Lost City, Hardy Cou	ntv W/V	Section F #6)15	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND				Observation of the	· · ·
b.	NRCS. Senior Environmental Scientist res	sponsible for identify	ving and delineat	⊠ aveventerwave	and wetlane	formed with current firm
	Regional Supplement to the Corps of Eng	gineers Wetland Del	ineation Manual	Fastern Mou	and wedland stains and Di	odmont Posion
ĺ	(Version 2.0). Delineation efforts encom	passed the 235-acre	lost River Site 1	6 study area a	nd the 14 se	ro Edwards Dun off
	sive initigation area located in Hampshire	e County. Contract F	ee: >\$2M	to study area a	id tile 14-ac	re Edwards Rull Oll-
	(1) TITLE AND LOCATION (City and State)				(2) YEAR CO	OMPLETED
	Struble Dam Toe Drain Repair Project, V	West Caln			IAL SERVICES	CONSTRUCTION (if appl.)
	Township, Chester County, PA	_	Section F #8	Ongoin	g (2016)	N/A
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPECIFIC ROLE		Ø	Check if project per	formed with current firm
ľ	CCWRA. Senior Environmental Scientist	and Wildlife Biologis	t responsible for	evaluating the	proposed as	eas of disturbance
	allu action area for potential bog turtle r	nabitat. Conducted t	the fieldwork and	prepared the	Phase I Bog	Turtle Habitat
	report. ree: \$2.5M (est.)				_	
	(1) TITLE AND LOCATION (City and State)				(2) YEAR CO	
İ	George B. Stevenson Dam Rehabilitation	n, Sinnemahoning S	tate Park,		AL SERVICES 13	CONSTRUCTION (if appl.)
.	Cameron County, PA				13	N/A
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	SPECIFIC ROLE		⊠ (heck if project per	formed with current firm
	Pennsylvania Department of General Ser	vices. Environmenta	l Scientist respor	sible for the id	entification a	and delineation of
	wetlands and waterways immediately do rehabilitation. Fee: \$23.5K	winstream of the ex	isting dam to sup	port the plann	ing and pern	nitting of the dam
	(1) TITLE AND LOCATION (Gity and State)					
-	Springton Reservoir Dam Rehabilitation	. Delaware County	DΛ	PROFESSION	(2) YEAR CO AL SERVICES	OMPLETED CONSTRUCTION (if appl.)
}_	_			20		N/A
е.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	SPECIFIC ROLE		⊠ (heck if project perf	formed with a second firm
	Aqua Pennsylvania, Inc. Environmental So	cientist tasked with	supporting field (efforts to deline	ate wetland	ls and waterways
	and conduct a bog turtle habitat survey.	Assisted in perform	ing rapid bioasse	ssment protoc	ols downstre	am of the dam.
	Reviewed the wetland delineation report	and bog turtle surv	ev documents. F	ee: \$942K		

12. N	ME	(Complete one Section E for ea	ì	14. YEARS EXE	PERIENCE
	ey W. Myers	Natural Resources/Wetla Delineation	nd a. 5	TOTAL	b. WITH CURRENT FIRM
15. F	RM NAME AND LOCATION (City and State)				
١	Gannett Fleming , Harrisburg, PA				100151 (NE)
	DUCATION (DEGREE AND SPECIALIZATION)		NT PROFESSION	AL REGISTRATION (STATE AND D	RISCIPLINE)
3S/	Environmental Technology Managemer	nt N/A			
8. 0	THER PROFESSIONAL QUALIFICATIONS (Publications, C fessional Organizations: Pennsylvania	Organizations: Training, Awards, etc.) Association of Environmental P	rofessionals		
Pro	ressional Organizations: Pennsylvania	19 RELEVANT PROJE	CTS		
	(1) TITLE AND LOCATION (City and State)	19 KEELVARTT KOSE	.0.0	(2) YEAR CO	
	Indefinite Delivery/Indefinite Quanti	ty Contract – Lost		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	River Site 16 Dam, Lost City, Hardy Co		tion F #6	2015	N/A
į				Chack if project per	formed with current firm
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A NRCS. Environmental Scientist for the	ND SPECIFIC ROLE	of wetland a		
a.	NRCS. Environmental Scientist for the	identification and defineation	ito mitigatio	n area located in Hamn	shire County
	Site 16 study area in Hardy County an	d the 14-acre Edwards Run oils	ite mugano	-t resulted in LICACE ar	proving the
	Accompanied the USACE during the fi	eld review of the delineation b	oundaries tr	iat resulted in OSACE ap	proving the
	boundaries and issuing a preliminary	jurisdictional determination, w	hìch was late	er used in calculating we	etiano ano stream
	impacts, Contract Fee: >\$2M				
	(1) TITLE AND LOCATION (City and State)			(2) YEAR C PROFESSIONAL SERVICES	CONSTRUCTION (# appl.)
	Catskill Watershed Dams, Reservoirs	, and Associated Facilities		Ongoing (2018)	Ongoing (2018)
	Reconstruction Design Services, Wet	land Delineation and Botanica	l Surveys	Oligonia (2010)	gg.(. ,
	for Ashokan Reservoir, Old Esopus, a	nd Beaver Kill Creek Flooding	Release	•	
	Project Schoharie County, NY				
b.	Project, Schoharie County, NY (2) RRIEF DESCRIPTION (Brief scape, size, cost, etc.) A	AND SPECIFIC ROLE			rformed with current firm
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A	ND SPECIFIC ROLE mental Protection. Environmen	tal Scientist	delineating and evalua-	ting wetlands within
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A	ND SPECIFIC ROLE mental Protection. Environmen	tal Scientist	delineating and evalua-	ting wetlands within
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) F New York City Department of Environ the zone of inundation. Fieldwork in	ND SPECIFIC ROLE mental Protection. Environmen vestigations involved mapping	tal Scientist	delineating and evaluation with GPS tec	ting wetlands within hnology, identifying
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork in wetland features and assessing their	we specific ROLE mental Protection. Environment vestigations involved mapping to function and values, collecting	tal Scientist	delineating and evaluation with GPS tec	ting wetlands within hnology, identifying
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork inwetland features and assessing their preparing a project impact summary.	we specific ROLE mental Protection. Environment vestigations involved mapping to function and values, collecting	tal Scientist	delineating and evaluate nundation with GPS tecing the point-center-qu	ting wetlands within hnology, identifying
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc., A New York City Department of Environ the zone of inundation. Fieldwork inwetland features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State)	we specific ROLE mental Protection. Environmen vestigations involved mapping function and values, collecting Fee: \$22M (est.)	tal Scientist the zone of i tree data us	delineating and evaluate nundation with GPS tecking the point-center-quipment (2) YEAR CORPOSESSIONAL SERVICES	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (# appi.)
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork in wetland features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Proj	we specific ROLE mental Protection. Environmen vestigations involved mapping function and values, collecting Fee: \$22M (est.)	tal Scientist the zone of i tree data us	delineating and evaluate nundation with GPS tecing the point-center-qu	ting wetlands within hnology, identifying arter method, and
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork in wetland features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Projecounty, PA	we specific ROLE mental Protection. Environment vestigations involved mapping to function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase	tal Scientist the zone of i tree data us	delineating and evaluate nundation with GPS techning the point-center-query (2) YEAR OF PROFESSIONAL SERVICES Ongoing (2016)	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (# appi.)
b. c.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork in wetland features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Projectionty, PA	wid specific role mental Protection. Environmen vestigations involved mapping to function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase	tal Scientist the zone of i tree data us	delineating and evaluate nundation with GPS tecking the point-center-quality (2) YEAR CONTROL SERVICES Ongoing (2016)	ting wetlands within thnology, identifying arter method, and OMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork in wetland features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Projectionty, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Pennsylvania American Water, Environ	wed specific role mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase and specific role commental Scientist assisting the	tal Scientist the zone of i tree data us , Luzerne Lead Enviro	delineating and evaluate nundation with GPS tecting the point-center-quere (2) YEAR CONTROL SERVICES Ongoing (2016) Check if project of numental Scientist in control	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (# appi.) N/A arformed with current firm inducting the fieldwork
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork in wetland features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Projectionty, PA	wed specific role mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase and specific role commental Scientist assisting the	tal Scientist the zone of i tree data us , Luzerne Lead Enviro	delineating and evaluate nundation with GPS tecting the point-center-quere (2) YEAR CONTROL SERVICES Ongoing (2016) Check if project of numental Scientist in control	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appi.) N/A erformed with current firm
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigand features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Projection (Brief scope, size, cost, etc.) Pennsylvania American Water. Environ and preparing the wetlands and water \$1.85M (est.)	wed specific role mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase and specific role commental Scientist assisting the	tal Scientist the zone of i tree data us , Luzerne Lead Enviro	delineating and evaluation with GPS techniques the point-center-quipment of the point of the point of the Pike Creek Danguage (2016)	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (# appi.) N/A arformed with current firm in a study area. Fee:
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigand features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Projection (Brief scope, size, cost, etc.) A Pennsylvania American Water. Envirous and preparing the wetlands and water \$1.85M (est.) (1) TITLE AND LOCATION (City and State)	wed specific ROLE mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase AND SPECIFIC ROLE commental Scientist assisting the erways identification and deline	tal Scientist the zone of i tree data us , Luzerne Lead Enviro eation report	delineating and evaluation with GPS tecting the point-center-quipersonal services Ongoing (2016) Check if project of the Pike Creek Dan	ting wetlands within thnology, identifying arter method, and OMPLETED CONSTRUCTION (# appi.) N/A arformed with current firm inducting the fieldwork in study area. Fee:
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigand features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Projection (Brief scope, size, cost, etc.) Pennsylvania American Water. Environ and preparing the wetlands and water \$1.85M (est.)	wed specific ROLE mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase AND SPECIFIC ROLE commental Scientist assisting the erways identification and deline	tal Scientist the zone of i tree data us , Luzerne Lead Enviro eation report	delineating and evaluation with GPS tecting the point-center-quipment of the point-center of the Pike Creek Dan (2) YEAR (2) YEAR (3) YEAR (4) YEAR (4) YEAR (5) YEAR (5) YEAR (6) YEAR (6) YEAR (6) YEAR (6) YEAR (6) YEAR (6) YEAR (7) YEAR (7) YEAR (7) YEAR (7) YEAR (8) YEAR	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (# appi.) N/A arformed with current firm in a study area. Fee:
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigand features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Projection (Brief scope, size, cost, etc.) (2) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) (4) Pennsylvania American Water. Environ and preparing the wetlands and water \$1.85M (est.) (1) TITLE AND LOCATION (City and State) Lake Scranton Dam Rehabilitation Environments	mental Protection. Environment vestigations involved mapping function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase and Specific Role commental Scientist assisting the erways identification and deline angineering Services, Luzerne Congineering Services,	tal Scientist the zone of i tree data us , Luzerne Lead Enviro eation report	delineating and evaluation with GPS tecting the point-center-quiper of the point-center of the professional services ongoing (2016) Check if project of the Pike Creek Dand (2) YEAR (1) PROFESSIONAL SERVICES Ongoing (2016)	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm inducting the fieldwork in study area. Fee: COMPLETED CONSTRUCTION (if appl.) N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigated by the scope of inundation of inundation. Fieldwork investigated by the scope of inundation In inundation of inunda	mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect — Preliminary Design Phase and specific Role onmental Scientist assisting the erways identification and deline and specific Role on specific Role on the property of the province of the	tal Scientist the zone of i tree data us , Luzerne Lead Enviro eation report	delineating and evaluation with GPS tecting the point-center-quipe professional services Ongoing (2016) Check if project of the Pike Creek Danier (2) YEAR (2) YEAR (3) YEAR (4) YEAR (4) YEAR (5) YEAR (5) YEAR (6) YEAR (6) YEAR (6) YEAR (7) YEAR	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm inducting the fieldwork in study area. Fee: COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigated by the scope of inundation of Environ the zone of inundation. Fieldwork investigated by the scope of inundation of Environment of Environ	mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase and specific Role crways identification and delined and specific Role crways identification and delined and specific Role commental Scientist assisting the crways identification and delined and specific Role commental Scientist conducting the con	tal Scientist the zone of i tree data us tree data us tree data us Luzerne Lead Environation report	delineating and evaluation undation with GPS techniques the point-center-quipment of the point of the Pike Creek Danders (2) YEAR (2) YEAR (2) YEAR (3) YEAR (4) YEAR (4) YEAR (5) YEAR (5) YEAR (6) YEAR (6) YEAR (7) YEAR	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm inducting the fieldwork in study area. Fee: COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm eparation of the
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigated by the preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Project ounty, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) Pennsylvania American Water. Environ and preparing the wetlands and water \$1.85M (est.) (1) TITLE AND LOCATION (City and State) Lake Scranton Dam Rehabilitation Environments of the scope, size, cost, etc.) Pennsylvania American Water. Environ Pennsylvania American Water. Environments of the scope, size, cost, etc.) Pennsylvania American Water. Environments of the scope, size, cost, etc.) Pennsylvania American Water. Environments of the scope, size, cost, etc.) Pennsylvania American Water. Environments of the scope, size, cost, etc.) Pennsylvania American Water. Environments of the scope, size, cost, etc.)	mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase and specific Role crways identification and delined and specific Role crways identification and delined and specific Role commental Scientist assisting the crways identification and delined and specific Role commental Scientist conducting the con	tal Scientist the zone of i tree data us tree data us tree data us Luzerne Lead Environation report	delineating and evaluation undation with GPS techniques the point-center-quipment of the point of the Pike Creek Dank (2) YEAR (1) PROFESSIONAL SERVICES Ongoing (2016) Check if project of the Pike Creek Dank (2) YEAR (1) PROFESSIONAL SERVICES Ongoing (2016) Check if project of the Check if the Check i	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm inducting the fieldwork in study area. Fee: COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm eparation of the ee: \$613K (est.)
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigated by the preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Project ounty, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) Pennsylvania American Water. Environ and preparing the wetlands and water \$1.85M (est.) (1) TITLE AND LOCATION (City and State) Lake Scranton Dam Rehabilitation Environment of the pennsylvania American Water. Environ (Brief scope, size, cost, etc.) Pennsylvania American Water. Environment of the pennsylvania American Water.	mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase enmental Scientist assisting the erways identification and delined and specific Role on mental Scientist conducting to mand delineation and delineation report for the process of the pro	tal Scientist the zone of i tree data us the Luzerne Lead Enviro eation report cunty, PA the fieldwork the Lake Scrain	delineating and evaluation undation with GPS techniques the point-center-quipment of the point of the Pike Creek Dank (2) YEAR (1) PROFESSIONAL SERVICES Ongoing (2016) Check if project of the Pike Creek Dank (2) YEAR (1) PROFESSIONAL SERVICES Ongoing (2016) Check if project of the Check if the Check i	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm inducting the fieldwork in study area. Fee: COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm eparation of the
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigated by the zone of inundation of zone zone of inundation in zone zone of zone zone zone zone zone zone zone zone	mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase enmental Scientist assisting the erways identification and delined and specific Role on mental Scientist conducting to mand delineation and delineation report for the process of the pro	tal Scientist the zone of i tree data us the Luzerne Lead Enviro eation report cunty, PA the fieldwork the Lake Scrain	delineating and evaluation undation with GPS techniques the point-center-quing the point-center-quipment of the project part of the Pike Creek Dander (2) YEAR (PROFESSIONAL SERVICES Ongoing (2016) Check if project part of the p	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm inducting the fieldwork in study area. Fee: COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm eparation of the ee: \$613K (est.)
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigated by the zone of inundation. Find the zone of the zone of the zone of	mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase and specific Role or and deline and specific Role or and deline on and delineation report for the ond Breach Services, Lurgan Toward Breach Services	tal Scientist the zone of i tree data us the Luzerne Lead Enviro eation report ounty, PA the fieldwork the Lake Scrain	delineating and evaluation with GPS tecting the point-center-quiper of the point-center of the project of the Pike Creek Dank (2) YEAR (2) YEAR (3) YEAR (4) YEAR (4) YEAR (5) YEAR (5) YEAR (6)	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm inducting the fieldwork in study area. Fee: COMPLETED CONSTRUCTION (if appl.) N/A erformed with current firm eparation of the ee: \$613K (est.) COMPLETED CONSTRUCTION (if appl.) N/A
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigand features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Proj. County, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) Pennsylvania American Water. Environ and preparing the wetlands and water \$1.85M (est.) (1) TITLE AND LOCATION (City and State) Lake Scranton Dam Rehabilitation Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.)	mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase Pand Specific Role on mental Scientist assisting the erways identification and delined and specific Role on mental Scientist conducting to an and delineation report for the on and delineation report for the design process, Lurgan Toward Specific Role	tal Scientist the zone of i tree data us	delineating and evaluation with GPS tecting the point-center-quipe (2) YEAR (2) YEAR (3) PROFESSIONAL SERVICES Ongoing (2016) Check if project of the Pike Creek Dank (2) YEAR (4) PROFESSIONAL SERVICES Ongoing (2016) Check if project of the project of the Pike Creek Dank (2) YEAR (4) PROFESSIONAL SERVICES (2) YEAR (4) PROFESSIONAL SERVICES (2) YEAR (5) YEAR (6) YEA	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appl.) N/A enformed with current firm inducting the fieldwork in study area. Fee: COMPLETED CONSTRUCTION (if appl.) N/A enformed with current firm eparation of the ee: \$613K (est.) COMPLETED CONSTRUCTION (if appl.) N/A enformed with current firm eparation of the ee: \$613K (est.)
c.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork in wetland features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Proj. County, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) Pennsylvania American Water. Environ and preparing the wetlands and water \$1.85M (est.) (1) TITLE AND LOCATION (City and State) Lake Scranton Dam Rehabilitation Environment of General States (1) TITLE AND LOCATION (City and State) Gunter Valley Dam Rehabilitation and Franklin County, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) Pennsylvania American Water. Environment States (1) TITLE AND LOCATION (City and State) Gunter Valley Dam Rehabilitation and Franklin County, PA	web specific role mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase and specific role crways identification and deline envays identification and deline and specific role commental Scientist conducting to and delineation report for the and Breach Services, Lurgan Tow AND SPECIFIC ROLE Services. Environmental Scientist Services. Environmental Scientist Services. Environmental Scientist Services. Environmental Scientist	tal Scientist the zone of i tree data us Luzerne Lead Enviro eation report the fieldwork the Lake Scrat vnship,	Cancel if project part of the Dam study area. For PROFESSIONAL SERVICES Ongoing (2016) Check if project part of the Pike Creek Dam (2) YEAR (1) PROFESSIONAL SERVICES Ongoing (2016) Check if project part of the Pike Creek Dam (2) YEAR (1) PROFESSIONAL SERVICES Ongoing (2016) Check if project part of the Pike Creek Dam (2) YEAR (1) PROFESSIONAL SERVICES (2) YEAR (2) YEAR (1) PROFESSIONAL SERVICES 2014 Check if project part of the Lead Environmenta	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm inducting the fieldwork in study area. Fee: COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm eparation of the ee: \$613K (est.) COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm eparation of the ee: \$613K (est.) COMPLETED CONSTRUCTION (if appl.) N/A
c.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A New York City Department of Environ the zone of inundation. Fieldwork investigand features and assessing their preparing a project impact summary. (1) TITLE AND LOCATION (City and State) Pikes Creek Dam Rehabilitation Proj. County, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) Pennsylvania American Water. Environ and preparing the wetlands and water \$1.85M (est.) (1) TITLE AND LOCATION (City and State) Lake Scranton Dam Rehabilitation Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.) Pennsylvania American Water. Environment of the scope, size, cost, etc.)	web specific role mental Protection. Environment vestigations involved mapping of function and values, collecting Fee: \$22M (est.) ect - Preliminary Design Phase and specific role onmental Scientist assisting the erways identification and deline and specific role on and delineation report for the on and delineation report for the and specific role on and specific role on and specific role and specific role Services. Environmental Scientist Services. Environmental Scientist Services. Environmental Scientist	tal Scientist the zone of i tree data us Luzerne Lead Enviro eation report the fieldwork the Lake Scrat vnship,	Cancel if project part of the Dam study area. For PROFESSIONAL SERVICES Ongoing (2016) Check if project part of the Pike Creek Dam (2) YEAR (1) PROFESSIONAL SERVICES Ongoing (2016) Check if project part of the Pike Creek Dam (2) YEAR (1) PROFESSIONAL SERVICES Ongoing (2016) Check if project part of the Pike Creek Dam (2) YEAR (1) PROFESSIONAL SERVICES (2) YEAR (2) YEAR (1) PROFESSIONAL SERVICES 2014 Check if project part of the Lead Environmenta	ting wetlands within thnology, identifying arter method, and COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm educting the fieldwork study area. Fee: COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm eparation of the ee: \$613K (est.) COMPLETED CONSTRUCTION (if appl.) N/A arformed with current firm eparation of the ee: \$613K (est.) COMPLETED CONSTRUCTION (if appl.) N/A

Ι		E. RESUMES OF KEY PERSO	ONNEL PROPOSED I	FOR THIS CON	TRACT			
	NAME mantha R. Hockenberry	13. ROLE IN THIS CONTRACT Natural Resources/Weti		a. TOTAL	14, YEARS E	b. WITH CURRENT FIRM		
	FIRM NAME AND LOCATION (City and State) Gannett Fleming, Harrisburg, P.	Α		1	-	1		
BS M:	EDUCATION (DEGREE AND SPECIALIZATION) /Biology S/Biology		17. CURRENT PROFESS Taxonomic Certif	IONAL REGISTRATIO	ON (STATE AND	DISCIPLINE)		
Pr	OTHER PROFESSIONAL QUALIFICATIONS (Publi ofessional Organizations: Society (nnsylvania Association of Profession	of Wetland Scientists; Socie	ety for Freshwater S	cience; Penns f Environment	ylvania Aca	demy of Science;		
		19 RELEVA	NT PROJECTS			711013		
	(1) TITLE AND LOCATION (City and State) Indefinite Delivery/Indefinite Quantity Contract – Lost			550550000		COMPLETED		
	River Site 16 Dam, Lost City, Ha	rdy County, WV	Section F #6	PROFESSION 20		CONSTRUCTION (# appl.) N/A		
	(3) BRIEF DESCRIPTION (Brief scope, size, cos	t, etc.) AND SPECIFIC ROLE		<u>⊠</u> 0	heck if project po	erformed with current firm		
	USDA, NRCS. West Virginia State	Office. Senior Environmen	tal Scientist and Aq	uatic Insect Ta	xonomist r	esponsible for leading		
	the field effort to assess the qua	lity of Lower Cove Run and	Poplar Hollow. Thi	s effort was co	omprised of	f developing and		
a.	implementing a field sampling p	lan, which included collecti	ng macroinvertebra	ites from vario	us samnlin	g reach stations		
	obtaining water quality data, and	d completing U.S. Environm	nental Protection A	gency rapid bid	passessmer	nt evaluation methods		
	l ioi hilysiochemical and habitat a	issessments under authoriz	ation of a WV. Ide	ntified macroli	nvertebrate	s were collected		
	under the authorization of a We	st Virginia Department of E	nvironmental Prote	ection-issued s	cientific co	llector's nermit		
	Identified macroinvertebrates in	the lab to the lowest pract	ical taxonomic leve	l, then digitall	v photogra	phed specimens		
	under magnification to compile t	the project's digital referen	ce collection. This	data was used	in the Wes	t Virginia Stream		
	Condition Index metrics and com	ipared to West Virginia tole	erance values. The	stream survey	results we	re used as a basis for		
	stream mitigation credits as calc	ulated using the West Virgi	nia stream and wet	land valuation	metrics.	Contract Fee: >\$2M		
	(1) THEE AND LOCATION (City and State)			PROFESSIONA	(2) YEAR (OMPLETED		
	Dam Environmental Assessment	is, Northeastern U.S.		Ongoing		CONSTRUCTION (if appl.) N/A		
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Confidential Client. Environmental Scientist in the field conducting wetlands a			N c	hack if project as	orformed with a second firm		
	and evaluating wetlands for pote	ential bog turtle (Clemmys r	muhlenbergii) habit	at within the	designated	study area. The hog		
	turtle is currently listed as endan	raluating wetlands for potential bog turtle (Clemmys muhlenbergii) habitat within the designated study area. The bog is currently listed as endangered and threatened. Other responsibilities include technical writing as co-author of the						
	wetlands and waterways identif	ication and Delineation Rep	ports and the Phase	Bog Turtle F	Reports, Fed	e: \$72K (est.)		
	(1) THEE AND LOCATION (City and State)				(2) YEAR C	OMPLETED		
	Pikes Creek Dam Rehabilitation County, PA		gn Phase, Luzerne	PROFESSIONA		CONSTRUCTION (if appl.) N/A		
с.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Check if project performed with current firm							
٠. [Pennsylvania American Water. Environmental Scientist coordinating with federal and state agencies regarding the potential							
ı	the documentation of proposed	for unreatened and/or endangered species in support of project authorization. Assistant permit coordinator responsible for						
-	the documentation of proposed impacts, alternatives considered and efforts made to avoid and minimize disturbances,							
	preparation of a wetland mitigation plan to create 0.25 acres of palustrine wetlands to compensate for unavoidable wetland impacts resulting from the project, and preparation of the dam safety letter of amendment. fee: \$1.8M (est.)							
	(1) TITLE AND LOCATION (City and State)	it, and preparation of the d	am satety letter of	amendment. I	ee: \$1.8M (2) YEAR C			
	Lake Scranton Dam Rehabilitatio		zerne County, PA	PROFESSIONA Ongoing	L SERVICES	CONSTRUCTION (if appl.) N/A		
d:	(3) BRIEF DESCRIPTION (Brief scope, size, cost,	etc.) AND SPECIFIC ROLE		⊠ c⊦	neck if project per	formed with current firm		
26	Pennsylvania American WaterEnv	ronmental Scientist respo	nsible for conduction	ng the fieldwo	rk and prep	aring the wetlands		
- 1	and waterways identification and delineation report for the Lake Scranton Dam study area. Coordinated with federal and							
-	state agencies regarding the potential for threatened and/or endangered species and initiated agency coordination in							
-	support of project authorization.	Support of project authorization. Fee: \$613K (est.) (1) TITLE AND LOCATION (City and State)						
	Environmental Site Assessment, Juniata County, PA			PROFESSIONA 201		CONSTRUCTION (if appl.) N/A		
	(3) BRIEF DESCRIPTION (Brief scope, size, cost,	etc.) AND SPECIFIC ROLE		⊠ ch	ack if project per	formed with a great firm		
3.	M&G Realty. Environmental Scientist for identification and delineation of wetlands and a Phase I Environmental Site							
	Assessment within a 20.49-acre study area. Geographic information system (GIS) responsibilities included geospatial data							
	processing, creation of report map figures, and wetland delineation mapping using ArcGIS 10.2. Co-authored the Wetlands							
	and Waterways Identification and	and Waterways Identification and Delineation Technical Memorandum. Fee: \$186K						
				~~!\				

	E DEGIII	MES OF KEY PERSO	ONNEL PROPOSED	FOR THIS C	CONTRACT		
	· 我就是一个一个人的意思的,我们就是一个一个一个一个一个一个一个一个一个	(Complete one Sec	tion E for each key p	person.)	14. YEARS EXP	ERIENCE	
12. NAME 13. ROLE IN THIS CONTRACT Jillian N. Arnold, CFM Natural Resources/Wetland					14. TEARO EXP	b. WITH CURRENT FIRM	
3111113	III II. AIRIOIU, CEIT	Delineation		11		11	
1.0	RM NAME AND LOCATION (City and State)						
A) E	iannett Fleming, Harrisburg, PA		1 17 CURRENT PROFES	SIONAL REGIST	FRATION (STATE AND D	SCIPLINE,	
	DUCATION (DEGREE AND SPECIALIZATION) Geo-Environmental Studies		Certified Floodp				
MS	Rinlogy						
18, 0	THER PROFESSIONAL QUALIFICATIONS (Publications, Orga	anizations, Training, Awards	etc.)				
Pro	fessional Organizations: Society of Wetla	nd Scientists; ASFP	NT PROJECTS				
	(1) TITLE AND LOCATION (City and State)	19 RELEVA	ANI PROJECTS		(2) YEAR CO	OMPLETED	
	Indefinite Delivery/Indefinite Quantity	Contract - Lost	6 5		SSIONAL SERVICES 2015	CONSTRUCTION (# appl.) N/A	
İ	River Site 16 Dam, Lost City, Hardy Cou		Section F #6				
ŀ	(a) DESCRIPTION (Brief copes size cost sign AND	SPECIFIC ROLE				formed with ourrent firm	
į	NRCS Environmental Scientist for the fig	eld effort to identif	y and delineate w	aterways a	nd wetlands acco	rding to the Regional	
į	Supplement to the Corps of Engineers W	Vetland Delineation	n Manual: Eastern	า Mountains	s and Piedmont F	legion (version 2.0).	
а.	Delineation efforts encompassed the 23	5-acre Lost River S	ite 16 study area a	and the 14-	acre Edwards Ku	v ott-site mitigation	
1	area incated in Hampshire County, Acco	ompanied the USA	CE during the field	l review of t	he delineation b	oundaries, which	
ĺ	resulted in the USACE approving the box	undaries and issuin	g a preliminary ju	risdictional	determination, \	vnich was later used	
	in calculating wetland and stream impact	cts. Served as the I	JSDA's authorized	l agent and	primary author o	or the USACE	
ļ	Application for Department of the Army	(404) Permit and	State of West Virg	inia Depart	ment of Environi	nental Protection	
	Application for 401 Water Quality Certif	ication. Contract I	ee: >\$2M		(2) YEAR C	OMPLETED	
_	(1) TITLE AND LOCATION (City and State)	Brook Townshin L	ackawanna Count	PROFE	SSIONAL SERVICES	CONSTRUCTION (if appl.)	
	Elmhurst Dam Rehabilitation, Roaring Brook Township, Lackawanna County,				2015	Ongoing (2017)	
b.	PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Check if project performed with current firm						
İ	Pennsylvania American Water, Environr	mental Scientist co	nducting the field\	work and co	oordinating with	federal and state	
	agencies for permitting for the Elmhurs	t Dam rehabilitatio	n and bridge remo	oval. Fee: \$	1.9M (est.)		
	(1) TITLE AND LOCATION (City and State)			-	(2) YEAR (ESSIONAL SERVICES	OMPLETED CONSTRUCTION (If appl.)	
	Ashokan Dam Wetland Delineation and	d Flood Release Pr	oject, Ulster Coun	ITV I	ngoing (2019)	N/A	
	NY				Chack if project no	oformed with current firm	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost. etc.) AND SPECIFIC ROLE New York City Department of Environmental Protection. Environmental Scientist responsible for evaluating wetland habitat						
C.	along 30 miles of Esopus Creek from the Schoharie Reservoir discharge channel downstream to the Hudson River.						
	Responsibilities included field identification of wetland habitat, mapping, and reporting current conditions prior to large and						
	continuous water releases from the rehabilitation of Gilboa Dam. These studies will be used as baseline data to compare						
	how those releases will affect the natural habitat along Esopus Creek, Fee: \$5.75M (est.)						
	(1) TITLE AND LOCATION (City and State)		-		(Z) TEAR (CONSTRUCTION (if appl.)	
	Tempe Town Downstream Dam Replac	cement Project,	Section F #	1	ESSIONAL SERVICES 2015	N/A	
	Maricopa County, AZ		Section F #	T		<u> </u>	
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Check if project performed with current firm						
	City of Tempe. Environmental Scientist preparing the USACE Section 404 Individual Permit Application and Section 401 Water						
	Quality Certificate from the Arizona Department of Environmental Quality. Responsibilities included preparation of mapping, biological evaluation, environmental assessment, public notice, and agency coordination. Fee: \$489K						
	biological evaluation, environmental as	ssessment, public r	otice, and agency	coordinatio	On. ree: \$489K	COMPLETED	
	(1) TITLE AND LOCATION (City and State) Nature-Like Fishway, Sunbury, PA			PROF	ESSIONAL SERVICES	CONSTRUCTION (if appl.)	
	Nature-Like Fishway, Sundury, PA				2013	2013	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Check it project performed with current firm Pennsylvania Department of General Services/Department of Conservation and Natural Resources. GIS Analyst obtaining base						
e.	Pennsylvania Department of General Sc	ervices/Departmen	t of Conservation	ana Natura	i Kesources, GIS	Analyst uptaining pase	
	data and producing final manning of a wetland mitigation plan for a fishway at Sunbury Dam. Created various layers for						
	proposed planting of deciduous and coniferous shrubs, natural regrowth of the breached dam area, and wetland mitigation boundaries. Final mapping was produced and presented to USACE for approval of proposed nature-like fishway. Fee: \$470						
	proposed planting of deciduous and co	iniferous shruhs in:	atural regrowth of	f the breach	ied dam area, an	d wetiand mitigation	

	E. R	ESUMES OF KEY PERSO	ONNEL PROPOSED FO	OR THIS CONTRACT			
12.	NAME	13. ROLE IN THIS CON	tion E for each key per		<u></u>		
	atthew D. Houtz, GISP	Economics/GIS	maci	a. TOTAL 15	b. WITH CURRENT FIRM		
15.	FIRM NAME AND LOCATION (City and State)						
10	Gannett Fleming , Harrisburg, PA						
M:	EDUCATION (DEGREE AND SPECIALIZATION) atthew D. Houtz, GISP		17. CURRENT PROFESSIO	NAL REGISTRATION (STATE AND	DISCIPLINE)		
18,	OTHER PROFESSIONAL QUALIFICATIONS (Publications	Organizations Training Awards	Certified Geograph	nic Information Systems	Professional		
Pro	ofessional Organizations: N/A	, organizations, maining, Awards,	etc.)				
	(1) TITLE AND LOCATION (City and State)	19 RELEVA	NT PROJECTS				
	NRCS Dam Assessments, Statewide WV			(2) YEAR (PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)		
	Times built Assessments, Statewide WV			2014	N/A		
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE			Check if project p	erformed with current firm		
	NRCS. Senior GIS Analyst developing	custom desktop GIS ap	plications to display	findings of 25 NRCS dar	n assessments in		
a.	West Virginia in a more user-friendly	r product, an interactive	e map using Esri's Ar	cReader software. Our	firm's scope of work		
	included dam inspections, reconnais	sance of downstream i	mpact areas, dam as	sessment reports, prepa	aration of cost		
	estimates to rehabilitate the dams, a	ind development of a G	ilS database containi	ing inundated structures	s. Fach database was		
	presented in an ArcReader mapping	application, which inclu	ided an interactive s	treet map, recent aerial	photography a		
	topographic map, inundation areas t	hat could be toggled or	n/off, and photo loca	ations of inundated stru	ctures that also		
	provided a photo of the structure to	the client. Fee: \$1.8M					
	(1) TITLE AND LOCATION (City and State)			(2) YEAR (OMPLETED		
	Engineering Study for the Rehabilita	tion of the Fredonia	Section F #5	PROFESSIONAL SERVICES 2009	CONSTRUCTION (if appl.)		
	FRS – Planning Phase II, Fredonia, A		3ection 1 #3	2009	N/A		
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.)	AND SPECIFIC ROLE		Check if project pe	erformed with current firm		
b.	Town of Fredonia. Senior GIS Analyst	working with the envir	ronmental economis	t on determining the ec	onomic impact of two		
	"afternatives" as part of a dam rehabilitation project. GIS data was compiled in a geodatabase and used to man and analyze						
	stream corridors, various flood recurrence intervals, land use (particularly agricultural lands), and tax parcel data, which						
- 1	included tax assessment data. GIS Ar	included tax assessment data. GIS Analyst for running impact analyses to determine the depth of flooding on impacted					
			Jour to deter	mile the depth of hood	ing on impacted		
	agricultural lands when looking at bo	th alternatives. Fee: \$9	98К				
-	(1) TITLE AND LOCATION (City and State)	th alternatives. Fee: \$9	98K	(2) YEAR (OMPLETED		
	agricultural lands when looking at bo (1) TITLE AND LOCATION (City and State) Pre-Planning Concepts Study for Sad	th alternatives. Fee: \$9	98K	(2) YEAR O	OMPLETED CONSTRUCTION (if appl.)		
	agricultural lands when looking at bo (1) TITLE AND LOCATION (City and State) Pre-Planning Concepts Study for Sad Rehabilitation Project, Maricopa Cou	ith alternatives. Fee: \$! Idleback FRS unty, AZ	Section F #4	(2) YEAR O PROFESSIONAL SERVICES 2015	COMPLETED CONSTRUCTION (# appl.) N/A		
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c.	agricultural lands when looking at bo (1) TITLE AND LOCATION (City and State) Pre-Planning Concepts Study for Sad Rehabilitation Project, Maricopa Cou (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) If Flood Control District of Maricopa Cou	Idleback FRS unty, AZ AND SPECIFIC ROLE unty. Senior GIS Analys	Section F #4	(2) YEAR O PROFESSIONAL SERVICES 2015 Check if project pe	COMPLETED CONSTRUCTION (# appl.) N/A Informed with current firm assessment of flood		
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c.	agricultural lands when looking at bo (1) TITLE AND LOCATION (City and State) Pre-Planning Concepts Study for Sad Rehabilitation Project, Maricopa Cou (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) / Flood Control District of Maricopa Cou damages to infrastructure and agricu on FLO-2D modeling conducted for the	Idleback FRS unty, AZ AND SPECIFIC ROLE unty. Senior GIS Analys iture in the 100-year st ne project. The purpose	Section F #4 t performing data are corm event under Wie of the analysis was	(2) YEAR OF PROFESSIONAL SERVICES 2015 Check if project particles and Without Date of provide quantitative to provide quantitative.	COMPLETED CONSTRUCTION (if appl.) N/A Informed with current firm assessment of flood Im conditions, based		
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d.	agricultural lands when looking at bo (1) TITLE AND LOCATION (City and State) Pre-Planning Concepts Study for Sad Rehabilitation Project, Maricopa Cou (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Flood Control District of Maricopa Cou damages to infrastructure and agricu on FLO-2D modeling conducted for the damages to use in the conceptual dev damages to a downstream natural ga (1) TITLE AND LOCATION (City and State) Hibernia Dam, Chester County, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Chester County Water Resources Auth existing 64.5-foot-high, 630-foot-long GIS mapping that illustrated traffic co are a vital component for local planne \$2.5M (est.) (1) TITLE AND LOCATION (City and State) Comprehensive Master Plan Update, (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A City of Parkersburg. Project GIS Analys features, cultural and historic resource public service districts; a future land up	Idleback FRS Unty, AZ AND SPECIFIC ROLE Unty. Senior GIS Analys Iture in the 100-year state project. The purpose velopment of rehabilitars-powered combined-combined	Section F #4 t performing data are form event under Wie of the analysis was attion alternatives. The cycle electric general Section F #8 st for data analysis a ment dam constructed is, crucial infrastructifiely mitigate flood data analysis and the revisions;	(2) YEAR OF PROFESSIONAL SERVICES 2015 Check if project per part of the provide quantitative to provide quantitative to provide quantitative to provide quantitative to provide quantitative to provide quantitative to provide quantitative to provide quantitative to provide quantitative to provide quantitative to provide quantitative to propersional services Ongoing (2016) Check if project per to proper	COMPLETED CONSTRUCTION (if appl.) N/A Informed with current firm assessment of flood Im conditions, based input on potential ESSMENT of flood CONSTRUCTION (if appl.) N/A Informed with current firm In in Dam, which is an intergency Action Plan Ints. The GIS EAP maps In human life. Fee: DMPLETED CONSTRUCTION (if appl.) N/A formed with current firm and and water and services, and ESOCIATED data to the		
d	agricultural lands when looking at bo (1) TITLE AND LOCATION (City and State) Pre-Planning Concepts Study for Sad Rehabilitation Project, Maricopa Cou (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Flood Control District of Maricopa Cou damages to infrastructure and agricu on FLO-2D modeling conducted for the damages to use in the conceptual dev damages to a downstream natural ga (1) TITLE AND LOCATION (City and State) Hibernia Dam, Chester County, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Chester County Water Resources Auth existing 64.5-foot-high, 630-foot-long GIS mapping that illustrated traffic co are a vital component for local planne \$2.5M (est.) (1) TITLE AND LOCATION (City and State) Comprehensive Master Plan Update, (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A City of Parkersburg. Project GIS Analys features, cultural and historic resource public service districts; a future land u City. Planning effort updates the City's	Idleback FRS Unty, AZ AND SPECIFIC ROLE Unty. Senior GIS Analys Iture in the 100-year state project. The purpose velopment of rehabilitates-powered combined-company. Senior GIS Analys Is zoned earth embankr Introl points, floodplain I ars and engineers to said I Parkersburg, WV IND SPECIFIC ROLE Is the preparation of ar es, existing land use, full is emap to guide zoning Is 2001 comprehensive	Section F #4 t performing data are form event under Wie of the analysis was attion alternatives. The cycle electric general Section F #8 st for data analysis a ment dam constructed in the cycle in inventory map serimetrional classification in the replan after the complement of the cycle in the cycle i	(2) YEAR OF PROFESSIONAL SERVICES 2015 Check if project per per per per per per per per per per	COMPLETED CONSTRUCTION (if appl.) N/A Informed with current firm assessment of flood im conditions, based input on potential essment of flood COMPLETED CONSTRUCTION (if appl.) N/A Informed with current firm In in a Dam, which is an intergency Action Plan Ints. The GIS EAP maps I human life. Fee: DMPLETED CONSTRUCTION (if appl.) N/A Informed with current firm Ind and water Indiand services, and I sociated data to the I so from the Ohio		
d.	agricultural lands when looking at bo (1) TITLE AND LOCATION (City and State) Pre-Planning Concepts Study for Sad Rehabilitation Project, Maricopa Cou (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Flood Control District of Maricopa Cou damages to infrastructure and agricu on FLO-2D modeling conducted for the damages to use in the conceptual dev damages to a downstream natural ga (1) TITLE AND LOCATION (City and State) Hibernia Dam, Chester County, PA (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A Chester County Water Resources Auth existing 64.5-foot-high, 630-foot-long GIS mapping that illustrated traffic co are a vital component for local planne \$2.5M (est.) (1) TITLE AND LOCATION (City and State) Comprehensive Master Plan Update, (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A City of Parkersburg. Project GIS Analys features, cultural and historic resource public service districts; a future land up	Idleback FRS Unty, AZ AND SPECIFIC ROLE Unty. Senior GIS Analys Iture in the 100-year state project. The purpose velopment of rehabilitates-powered combined-company. Senior GIS Analys Is zoned earth embankr Introl points, floodplain I ars and engineers to said I Parkersburg, WV IND SPECIFIC ROLE Is the preparation of ar es, existing land use, full is emap to guide zoning Is 2001 comprehensive	Section F #4 t performing data are form event under Wie of the analysis was attion alternatives. The cycle electric general Section F #8 st for data analysis a ment dam constructed in the cycle in inventory map serimetrional classification in the replan after the complement of the cycle in the cycle i	(2) YEAR OF PROFESSIONAL SERVICES 2015 Check if project per per per per per per per per per per	COMPLETED CONSTRUCTION (if appl.) N/A Informed with current firm assessment of flood im conditions, based input on potential essment of flood COMPLETED CONSTRUCTION (if appl.) N/A Informed with current firm In in a Dam, which is an intergency Action Plan Ints. The GIS EAP maps I human life. Fee: DMPLETED CONSTRUCTION (if appl.) N/A Informed with current firm Ind and water Indiand services, and I sociated data to the I so from the Ohio		

	and a specific for the Control of th	RESUMES OF KEY PERSON (Complete one Section	n E for each key person	14, YEARS EX	PERIENCE			
12. NAME Christopher D. Krebs, PE, CFM, GISP		13, ROLE IN THIS CONTRACT Economics/GIS	a. 2:	TOTAL	b. WITH CURRENT FIRM			
a di la	RM NAME AND LOCATION (City and State)							
6. E	Gannett Fleming, Harrisburg, PA DUCATION (DEGREE AND SPECIALIZATION) Civil Engineering	Professional En	ssional REGISTRATION (ST gineer/VA; Certified tems Professional; E	ATE AND DISCIPLINE) Floodplain Manager; C sri Certified AcrGIS Des	ertified Geographic ktop Professional			
8. 0	THER PROFESSIONAL QUALIFICATIONS (Publications ASFPM; P	ions, Organizations, Training, Awards, etc	S.)					
ro	ressional Organizations: ASPPIVI , P	19 RELEVAN	T PROJECTS					
7	(1) TITLE AND LOCATION (City and State)			(2) YEAR C PROFESSIONAL SERVICES	OMPLETED CONSTRUCTION (if appl.)			
	Engineering Study for the Rehabil FRS – Planning Phase II, Fredonia,		Section F #5	2009	N/A			
ı. İ	(3) BRIEF DESCRIPTION (Brief scope, size, cost, e	otc.) AND SPECIFIC ROLE			rformed with current firm			
ı	Town of Fredonia. GIS Task Manag	ger working with an enviror	imental economist t	o determine the econd	mic impact or two			
ı	"alternatives" as part of a dam ref	nabilitation project. GIS dat	a was compiled in al	1 ESTI geodatabase and	os Ego: \$08K			
	inundation areas and analyze floo	d damages for various floo	d-recurrence interva	(2) YEAR (OINIELETED			
	(1) TITLE AND LOCATION (City and State)	County A7		PROFESSIONAL SERVICES	CONSTRUCTION (If appl.)			
	White Tanks FRS No. 4, Maricopa	County, A2	Section F #4	2015	N/A			
).	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Flood Control District of Maricopa County. GIS Task Manager for NRCS planning-phase study for dam rehabilitation. Preparation of NRCS work plan and environmental assessment involved developing alternatives for no action, the decommissioning and rehabilitation of the dam to meet current criteria. Developed GIS data sets to support an unsteady flow HEC-RAS model for the reach downstream of the dam to estimate flood depths and velocities during extreme events for the alternatives. In a GIS environment, automated development of input data for an URB1 flood damages assessment model							
	using the HEC-RAS results, and Gi	using the HEC-RAS results, and GIS data for impacted properties and structures downstream. Fee: \$489K						
	(1) TITLE AND LOCATION (City and State)			(2) TEAR	COMPLETED			
	NRCS Dam Assessments, Statewi	de WV		PROFESSIONAL SERVICES 2011	N/A			
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE NRCS. GIS Task Manager conducting assessments for more than 100 NRCS dams located in WV. Coordinated with local and state agencies to obtain GIS data, developing GIS data sets to support automated H&H modeling, providing GIS/GPS field da collection support, and packaging digital deliverables that are accessed from a GIS application. Coordinated the acquisition a statewide GIS database including high-resolution terrain and orthoimagery and high-accuracy building footprints, streams and road centerlines. Provided terrain surfaces and supplemental data (flooding areas, shade relief, stream profiles) to support H&H modeling. Provided GPS and geotagging technical support for the field acquisition of photos identifying downstream buildings impacted during a dam failure. Converted GIS data to CAD format to support dam failure inundation mapping in AutoCAD. Packaged project data into an interactive ArcReader map, with point-and-click access to H&H models as-built plans, field investigations, dam inspection reports, photos, and dam failure inundation areas. Fee: \$1.8M							
	(1) TITLE AND LOCATION (City and State)			PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (# app			
	Modeling, Mapping, and Conseq	uence (MMC) Analysis for	USACE-owned	Ongoing (2016)	N/A			
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE USACE, Vicksburg District, MMC Production Center. Senior Project Engineer coordinating all GIS data acquisition, conducting dam break analyses, and supervising production of project mapping. Analysis included development of custom GIS application to build HMR52 input file. Hydrologic analyses for the probable maximum flood used HEC-HMS; dam break was performed using DAMBRK; and flood-wave routing downstream used the unsteady flow capabilities of HEC RAS 3.1. Results from HEC-HMS were managed using HEC-DSS Vue and input directly into the HEC-RAS for subwatersheds downstream of the dam. The results of the analyses were mapped through GIS and used for the emergency action plan. Fee: \$1.05M (est.)							
	Safety Evaluations of Existing Da Services, Nationwide, VA, NC, SC and AR	C, NH, MA, MI, ND, SD, IL, T	Safety Engineering TX, WI, MO, TN,	PROFESSIONAL SERVICES 2012	CONSTRUCTION (# ap			
е.	(3) BRIEF DESCRIPTION (Brief scope, size, cost U.S. Department of the Interior, The project included H&H model updates. Fee: \$2.1M	USFWS. H&H and GIS Task	Manager for this dar using HEC-RAS and G	n safety services indefi	performed with current firm nite delivery contrac gency action plan			

	E. RESU	IMES OF KEY PERSO	ONNEL PROPOSED	FOR THIS CONTRACT		
		(Complete one Sec	tion E for each key pe	erson.)		
	NAME	13. ROLE IN THIS CON	TRACT	14. YEARS EX		
VI	adimir Cecka, PE	Submittal Revie	W	a. TOTAL	b. WITH CURRENT FIRM	
15.	FIRM NAME AND LOCATION (City and State)			25	25	
	Gannett Fleming, Harrisburg, PA					
16.	EDUCATION (DEGREE AND SPECIALIZATION)		17 CURRENT PROFESS	IONAL REGISTRATION (STATE AND	DIBOIDLINE	
BS	/Civil Engineering		Professional Engi	neer/PA, GA, MO, KY, VA,	FI NI IN	
			First Aid-Adult		1 5, 143, 114	
			CRP/AED-Adult			
18.	OTHER PROFESSIONAL QUALIFICATIONS (Publications, Org	anizations, Training, Awards,	etc.)		 	
Pro	ofessional Organizations: American Concr	ete Institute; Nation	nal Council of Exam	iners for Engineering and	Surveying	
		19. RELEVA	NT PROJECTS			
	(1) TITLE AND LOCATION (City and State)				OMPLETED	
	New Creek Site No. 14, Keyser, WV		C	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)	
			Section F #2	2013	2013	
a.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND			Check if project pa	rformed with current firm	
	NRCS. Structural Project Manager respon	nsible for the design	n of a new 80-foot-	tall principal spillway rise:	to replace the	
	existing structure at the New Creek Site	No. 14 dam as part	of a seismic upgrad	de. The design was in acc	ordance with NRCS	
	technical reports and design procedures	. Fee: \$3M	1.0		01 00 11101 141100	
	(1) TITLE AND LOGATION (City and State)			(2) YEAR C	OMPLETED	
	Indefinite Delivery Contract for Dams, L	ost River Site No.		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)	
	16, Hardy County, WV,		Section F #6	2015	N/A	
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE					
	NRCS. Structural Project Manager involv	ed in the design of a	a new 45-foot-tall r	principal spillway riser and	limnact hasin at the	
	Lost River Site No. 16 dam. The design v	vas in accordance w	ith NRCS technical	reports and design proce	dures	
	Fee: >\$2M			. apa. ta ana acaign proce	uui cs.	
	(1) TITLE AND LOCATION (City and State)			(2) YEAR C	OMPLETED	
	Elkwater Fork Dam, Randolph County, V	WV		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)	
	•		Section F #7	2011	2011	
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND	SPECIFIC ROLE		M or tr		
	NRCS. Structural Project Manager respon	sible for designing	an inlet and concre	Creck if project pe	formed with current firm	
	dam. Fee: \$1.5M	ionale for designing	an mict and conjere	ite conduit in the principa	ii spiliway of a KCC	
	(1) TITLE AND LOCATION (City and State)					
	Upper Deckers Site 1 Dam Rehabilitation	n Preston		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)	
	County, WV	11, F1231011	Section F #1	Ongoing (2016)	N/A	
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	ADEOLEIO DOLE				
u.	NRCS Structural Project Manager respon	SPECIFIC ROLE Scible for design of		Check if project per	formed with current firm	
	NRCS. Structural Project Manager respor	design of design of	new riser to repla	ce the existing structure t	or an existing 45-	
	foot-high zoned embankment dam. The \$999K (est.)	design was in accor	dance with NRCS t	echnical reports and desig	gn procedures. Fee:	
	(1) TITLE AND LOCATION (City and State)					
	Elmhurst Dam Rehabilitation (PADEP D7	(0.25.10) Laslania		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)	
	——————————————————————————————————————	u-33-10), Lackawai	nna County, PA	2015	Ongoing (2017)	
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	SPECIFIC ROLE			formed with current firm	
е.	Pennsylvania American Water. Structural	Project Manager re	esponsible for preli	minary and final decign	Structural decide	
	included spillway widening, existing crest	rehabilitation and	a new hoy culvert	under an evicting readuc	u The new smill	
	consisted of a new slab with steps, retain	ing walls, and lahor	inth walls Docions	ander an existing roadwa	y, The new spinway	
	during construction to stabilize existing g	round Foo \$1 OM	initi waits. Designe	a temporary sneathing ti	nat will be used	
- 1		LOULIU, LEG. 21.3M				

22.3	5-49_1888888880000 - 1888 000000 E.	RESUMES OF KEY PERS	CONNEL PROPOSED Section E for each key pe	FOR THIS CONTRACT	
12 N		13. ROLE IN THIS CONTRA	ACT	14. YEARS E)	(PERIENCE
	d T. Hoover, EIT	Prepare Record/A		a. TOTAL 9	b. WITH CURRENT FIRM
	RM NAME AND LOCATION (City and State)				
	Gannett Fleming, Harrisburg, PA		Lan Cultural Profession	SIONAL REGISTRATION (STATE AND	DISCIPLINE)
	DUCATION (DEGRÉE AND SPECIALIZATION) 6/Civil Technology		EIT/PA	SIONAL KEGISTRATION (STATE AND	Dioon en-
	Structural Design and Construction	Engineering			
-	hnology	Lighteering			
18. 0	THER PROFESSIONAL QUALIFICATIONS (Publications)	ons, Organizations, Training, Award	s, etc.)		
		19 RELEV	ANT PROJECTS	(2) YEAR (COMPLETED
	(1) TITLE AND LOCATION (City and State)	o 11 and 11A Dam		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	Upper Deckers and Salem Fork Sit Evaluations, Preston and Harrison		Section F #10	2014	2014
a.	(2) BRIEF DESCRIPTION (Brief scope size cost e	to LAND SPECIFIC ROLE			erformed with current firm
	NRCS, Lead CADD Technician prep	aring drawing and CADI	Standards for the	evaluation of the dams. T	he project consisted of
	evaluating spillway capacity and the	ne auxiliary spillway inte	egrity usefulness of t	the site. Fee: \$593K	
	(1) TITLE AND LOCATION (City and State)			(2) YEAR	COMPLETED (if appl.)
	New Creek Site 14 Dam Rehabilita	ation, Grant County,	Section F #2	PROFESSIONAL SERVICES 2013	2013
	wv		Section F #2		
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, e	etc.) AND SPECIFIC ROLE			erformed with current firm
b.	NRCS. Lead CADD Technician resp	onsible for preparing co	entract drawings and	d CADD standards for the	renabilitation of an
	existing 100-foot-high, 940-foot-lo	ong zoned earthfill dam.	. Responsibilities als	so included providing cons	struction-phase
	services by using construction sur	veys to determine as-bu	ilt quantities. Reha	abilitation measures includ	led slope stabilization,
	RCC spillway armoring, a new toe	drain system, and outle	et works modificatio	ns. Fee: \$3M	COMPLETED
	(1) TITLE AND LOCATION (City and State)	ND and NU		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	NRCS Dam Assessments, WV, WI,	, ND, and NH		2012	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cost,	etc.) AND SPECIFIC ROLE			performed with current firm
C.	NRCS, CADD Technician assisting i	n preparing inundation	maps for dam asses	ssment reports for 29 NRC	S dams located in West
0.	Virginia, Wisconsin, North Dakota	, and New Hampshire.	Work included perfo	orming dam inspections; c	onducting
	reconnaissance of downstream in	npact areas; performing	dam failure modeli	ing using HEC-RAS; prepar	ing inundation
	mapping; performing hydrologic,	hydraulic, and auxiliary	spillway analyses us	sing the NRCS SITES comp	uter program;
	preparing failure risk indexes; ide	ntifying deficiencies; an	d developing rehabi	ilitation alternatives. Fee	: \$1.8M COMPLETED
	(1) TITLE AND LOCATION (City and State)			PROFESSIONAL SERVICES	CONSTRUCTION (# appl.)
	Lost River No. 16 Dam, Hardy Co	unty, WV	Section F #6	2015	N/A
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cost	etc.! AND SPECIFIC ROLE			performed with ourrent firm
	NRCS. CADD Technician responsit	le for design drawings	and CADD standards	s for a dam being construc	ted for water supply
	and flood control. Fee: >\$2M				
_	(1) TITLE AND LOCATION (City and State)			PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)
	Rehabilitation of Thorn Run Dam	, Butler County, PA		2012	2012
	(3) BRIEF DESCRIPTION (Brief scope, size, cost,	etc LAND SPECIFIC ROLE	-		performed with current firm
e.	Pennsylvania American Water, Le	ad CADD Technician res	sponsible for prepar	ring contract drawings and	NRCS. CADD standards
	for the rehabilitation of a 30-foot	-high, 600-foot-long ear	rthen embankment	dam. Rehabilitation meas	sures included slope
	stabilization, RCC embankment a	rmoring, a new toe drai	n system, and a nev	v concrete spillway. Prepa	ared conceptual design
	drawings for increasing the dam's	s spillway capacity and o	correcting embankn	nent deficiencies. Fee: \$1	.3M
	1				

	E. RESU	MES OF KEY PERSO	ONNEL PROPOSED F	OR THIS CONTRACT	=
12.	NAME	13. ROLE IN THIS CON	TRACT		VDEDIENOE
	am J. Moyer, PLS	Survey		a. TOTAL 10	b. WITH CURRENT FIRM
15. I	FIRM NAME AND LOCATION (City and State)				110
	Gannett Fleming , Harrisburg, PA				
16, I	EDUCATION (DEGREE AND SPECIALIZATION)		17. CURRENT PROFESSIO	NAL REGISTRATION (STATE AND	DISCIPLINE)
	S/Surveying Technology		EIT/PA	(**************************************	-100% EME,
BS,	Civil Engineering Technology		PLS/PA	a duda	
18. 0	OTHER PROFESSIONAL QUALIFICATIONS (Publications, Orga	nizations, Training, Awards	First Aid/CPR/AED		
Pro	ofessional Organizations: Pennsylvania Soc	iety of Land Surve	yors; National Societ	y of Professional Survey	ors
		19 RELEVA	NT PROJECTS:		
	(1) TITLE AND LOCATION (City and State)	-		(2) YEAR (OMPLETED
	New Creek Dam Site 14, Keyser, WV		Section F #2	PROFESSIONAL SERVICES 2013	CONSTRUCTION (if appl.) 2013
a.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S			Check if project pe	erformed with current firm
a.	USDA, NRCS, West Virginia State Office. F	arty Chief collecting	ng topographic surve	ev data of the New Creel	c Dam and
	surrounding area, including access roads	and cross sections	downstream of the	dam, and for conducting	denth-counding
	surveys in the reservoir. Responsible for	the collection of a	shuilt and construct	tion shock surveys during	s depth-sounding
	Fee: \$3M (1) TITLE AND LOCATION (City and State)	- Concedion of a		non check surveys during	g construction.
					OMPLETED
	Salem Fork Sites 11 and 11A Dams, Harri	son County, WV	Section F #10	PROFESSIONAL SERVICES 2014	CONSTRUCTION (if appl.) N/A
	(0) PRITE				
b.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND S	PECIFIC ROLE		Check if project pe	erformed with current firm
	Pennsylvania American Water. Party Chie	f coordinating and	conducting all surve	ey work, including estab	lishing survey control
- 1	and setting monuments to be used during	g construction. Us	ed GPS and total sta	tion equipment to man	the existing
	topographic and planimetric features of t	he existing dam ar	id appurtenant struc	tures and to conduct a l	nathymetric survey of
	the reservoir bottom for use in the design	of rehabilitation f	eatures for the dam	. Fee: \$200K	outly meeric survey of
	(1) TITLE AND LOCATION (City and State)				OMPLETED
	Elkwater Fork Water Supply Dam, Rando	lph County, WV		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
.		•	Section F #7	2011	2011
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SI	PECIFIC ROLE		M about it is a	
ı	NRCS. Survey Technician for the 130-foot	-high 700-foot-los	a RCC gravity dam s	Uneck if project pe	formed with current firm
	Services included ground surveys and aer	ial manning of the	dam and recently uaili	with a construction cost	of \$33 million.
	(1) TITLE AND LOCATION (City and State)	at mapping of the	dam and reservoir a		
-	Nesbitt Dam Rehabilitation, Scranton, PA			PROFESSIONAL SERVICES	OMPLETED CONSTRUCTION (if appl.)
L		`		2012	2012
- 1	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SI	PECIFIC ROLE		Check if project no	farmed with a second first
d.	Pennsylvania American Water. Party Chie	f collecting topogra	aphic survey data of	a dam and surrounding	aroa including access
	roads and cross sections downstream of t	he dam, and for co	industing donth sou	nding summers in the sec-	area, including access
- 1	Specialist developing erosion and sedimer	nt pollution contro	I plans Dravided or	numg surveys in the resi	ervoir. Served as a
-	of RCC. Fee: \$3.7M	it polition contro	i piaris. Provided on	-site engineering service	es for the placement
_	(1) TITLE AND LOCATION (City and State)			(0) VEAD O	ON OUT THE O
	Elmhurst Dam Rehabilitation, Elmhurst, I	DA .		(2) YEAR O	CONSTRUCTION (if appl.)
L		^		2012	Ongoing (2017)
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SF	PECIFIC ROLE		Chark if project and	formed with a second of
€.	Pennsylvania American Water. Party Chief	responsible for co	llecting topographic	Survey data of a dam as	nd surrounding area
ļ	including access roads and cross sections	downstream of the	dam and for no-fo	rmina donth	iiu surrouliding area,
	reservoir. Also served as Specialist rospon	scible for develope:	and for perio	rining depth-sounding si	urveys in the
- 1	reservoir. Also served as Specialist respor rehabilitation of the dam. Fee: \$1.9M	ising for develobit	ig stability calculatio	ons and construction dra	wings for the
- 1					

	E. RESUMES OF KEY PERS	ONNEL PROPOSED Fo	son.)	Exception Speciment by
NAME rian S. Miller, PE, SIT	13. ROLE IN THIS CON Survey	NTRACT L	14. YE/ a. TOTAL 8	ARS EXPERIENCE b. WITH CURRENT FIRM 8
FIRM NAME AND LOCATION (City and State)	<u> </u>			
Gannett Fleming, Harrisburg EDUCATION (DEGREE AND SPECIALIZATION		17. CURRENT PROFESSIO	NAL REGISTRATION (STAT	E AND DISCIPLINE)
/Civil Engineering Technology		Professional Engin SIT/PA First Aid/CPR/AED		
OTHER PROFESSIONAL QUALIFICATIONS (Foressional Organizations: Natio	Publications, Organizations, Training, Awards anal Society of Professional Su	s, etc.) Irveyors	_	
Olessional Olganizations	19. RELEV	ANT PROJECTS		
(1) TITLE AND LOCATION (City and State)			PROFESSIONAL SERV	YEAR COMPLETED (Fappl.)
Dam Assessments, WV			2011	N/A
(3) BRIEF DESCRIPTION (Brief scope, size	, cost, etc.) AND SPECIFIC ROLE	<u> </u>		roject performed with current first
NRCS. CADD Technician assist Virginia. Work includes perform dam failure modeling using Hanalyses using the NRCS SITE rehabilitation alternatives.	orming dam inspections; cond IEC-RAS; preparing inundation S computer program; prepari	ducting reconnaissan n mapping; performi	ce of downstream ir ng hydrologic, hydra s; identifying deficie	mpact areas; performing aulic, and auxiliary spillwa encies; and developing
(1) TITLE AND LOCATION (City and State)				YEAR COMPLETED //ICES CONSTRUCTION (if appl
New Creek Site 14 Dam Reha	abilitation, Grant County,	Section F #2	PROFESSIONAL SERV	2013
and outlet works modification (1) TITLE AND LOCATION (City and State) Lost River Site 16, Hardy Coa		Section F #6	PROFESSIONAL SERV	VICES CONSTRUCTION (IF app.
(A) DDISC OF ODDISTION (Chief come of	o cost of a LAND SPECIFIC ROLF		☐ Check if p	project performed with current firm
a design tool for the preliming earthfill dam. Hydrologic an evaluate the proposed spillw included establishing GPS consite exploration of subsurfaction and design of the earthfill er structures. Fee: >\$2M	onsible for developing plans nary layout and development alyses were completed using vay's susceptibility to erosion introl, aerial mapping of the Lie conditions, laboratory testimbankment, hydrologic and h	of auxiliary spillway the NRCS's SITES cor damage and breachi ost River Valley, stak ing of soil and rock sa	alternatives for a ne nputer model. The ng. In addition, the eout of exploratory mples, materials sti d proportioning of	ew 80-root-nigh zoned model was also used to project scope of work drill holes and test pits, outlies, preliminary zoning
(1) TITLE AND LOCATION (City and State) Nesbitt Dam Rehabilitation			PROFESSIONAL SER	
Mesbitt Dam Kenabintation,	, Lackawaiiila County) i A		2012	2012
for the emergency repair of rehabilitation measures, inc management during constru	er. CADD Technician responsi a 101-foot-high, 530-foot-lor luding slope flattening and RO action of the dam for RCC ins	ng earthfill and stone CC buttressing and ar	on of contract draw masonry dam. Wor moring. Also assist	rked on the final design of
(1) TITLE AND LOCATION (City and State Thorn Run Dam Rehabilitat	ion, Butler County, PA		PROFESSIONAL SER	RVICES CONSTRUCTION (# app. 2012
standards for the rehabilitation	ze, cost, etc.) AND SPECIFIC ROLE ter. Lead CADD Technician restion of a 30-foot-high, 600-fo RCC embankment armoring, for increasing the spillway ca	ot-long zoned earthe a new toe-drain syst	paration of contract n embankment dan em, and a new cond	n. Rehabilitation measure crete spillway. Prepared

	E. R	RESU	MES OF KEY PERSO	NNEL PROPOSED FO	OR THIS CONTRA	CT	
	NAME		13. ROLE IN THIS CONTR.	ion E for each key pers	son.)		14. YEARS EXPERIENCE
A	aron D. Achenbach, Assoc. DBIA, ENV	SP	QC Inspections &	Tests/Document Da	aily Activities	a, T01	AL b. WITH CURRENT FIRM
15	FIRM NAME AND LOCATION (City and State)			_		11	7
	<i>Gannett Fleming</i> , Harrisburg, PA						
16	EDUCATION (DEGREE AND SPECIALIZATION)	17. CL	IRRENT PROFESSIONAL RE	GISTRATION (STATE AND I	DISCIPLINE)		
	A/History	ACI	Grade 1; Nuclear M	pisture/Density Equ	ipment; Portabl	e Nucle	ar Gauge Safety
18.	S/Geoenvironmental Studies OTHER PROFESSIONAL QUALIFICATIONS (Publication	Cert	ification; Envision™	Sustainability Profe	ssional; Associa	te Desig	n-Build Professional
Pr	ofessional Organizations: ASDSO; Desi	ign-B	uild institute of Am	erica			
				T PROJECTS			
	(1) TITLE AND LOCATION (City and State)						COMPLETED
	New Creek Site 14 Dam Rehabilitati	ion, i	keyser, WV	Section F #2	PROFESSIONAL SE	RVICES	CONSTRUCTION (if appl.) 2013
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.)						
	NRCS. Fill and Concrete Inspector mo	onito	ring rehabilitation v	vork and ungraded	Check	if project p	erformed with current firm
3.	of subgrade soils, dewatering efforts	s. gro	undwater level mor	vork and upgrades i	io dam. QA respi	onsibili	ties included approval
-51	approval for fill placement, setup of	field	laboratory soils test	ting for gradation a	nalyses one-noi	eau pie.	zometers, son
	samples, inspection of toe drain cons	struc	tion, use of nuclear	moisture/density g	auge proper sei	naratio	of sail types into
	stockpiles, daily measurements of qu	uanti	ties excavated and f	ill placed, assistanc	e with site surve	ving a	nd site meetings with
	Lilent and contractor, Concrete QA II	nspe	ction involved moni	toring construction	of the new intak	ce struc	ture by checking
	i dimensions and reinforcing steel and	d pro	per curing methods	Inspected intake ri	iser mechanical	hardwa	re. Fee: \$3M
	(1) THE PART COOK (ONLY and State)					(2) YEAR (COMPLETED
	Nesbitt Dam Rehabilitation, Lackaw	ranna	County, PA		PROFESSIONAL SE 2012	RVICES	CONSTRUCTION (if appl.) 2012
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.)	AND S	PECIFIC ROLE		⊠ Chack	if project pr	offermed with a great firm
	Pennsylvania American Water. Resid	lent F	Project Representati	ve monitoring reha	bilitation work a	ind upg	rades Monitored
1.	installation of relief wells, dewatering	g we	lls, piezometers, hill	side excavation for	signs of instabili	ity, con	ducted biweekly
b.	readings of inclinometers and piezon	netei	rs, observed instalia	tion of driven piles	for spillway train	ning wa	Il verified proper
	testing was conducted by QC for con	crete	placement, inspect	ted spillway apron b	edrock for dent	al conc	rete placement and
	RCC inspection. QA inspection involv	'ed in	stalling upstream p	iezometers and dev	vatering wells d	rilling a	nd high-mobility
	grouting through embankment core	cuto	f wall center, drillin	g and grouting for t	he upstream an	d down	stream compaction
	grouting program, monitoring upstre	am a	ing gownstream pie	zometers during gr	outing program,	and tra	acking contractor
	costs. Continuously monitored seepa	ige v	olumes at downstre	am weirs and condi	ucted chlorine sl	ug test	ing. Fee: \$3.7M
	Lee Hall Dam Rehabilitation Prelimir	nary	Geotechnical Design	n. Newnort News	PROFESSIONAL SE		OMPLETED CONSTRUCTION (if appl.)
_	_VA			, weirport news,	2012		N/A
C.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.)	AND SI	PECIFIC ROLE		⊠ Check i	f project ne	uformed with current firm
	Newport News Waterworks. Assisted with determining theoretical contractor production rates regarding construction of the						
	toe drain and embankment fill for a r	najoi	dam rehabilitation	project. Fee: \$2M			•
	Thorn Run Dam Rehabilitation, Butle	0-	t. DA				OMPLETED
	Butte	er Co	unty, PA		PROFESSIONAL SEI	RVICES	CONSTRUCTION (If appl.) 2012
	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.)	AND SF	PECIFIC ROLE		⊠ Check if		rformed with a second form
	Pennsylvania American Water. Reside	ent P	roject Representativ	ve assisting with mo	onitoring rehabil	itation	work and ungrades to
d.	the dam. Monitored the surcharge fil	l plac	ement and the fine	sand blanket drain	fill. Fill operation	inspec	tion involved
u.	monitoring for proper soil types, soil	lift co	Instruction, moistur	e content, nuclear	moisture/densit	v comn	action results, and
	recommendation of different fill place	emer	it and compaction r	nethods to comply	with nians and s	necifica	ations Monitoring
	was required for concrete and steel re	einto	rcement placement	for spillway section	ns and underlyin	g drain	age system for the
	spillway. Inspection included subgrad	le ap	oroval, compaction	of the fine and coar	se sand drainfill	, and H	DPE pipe placement.
	Reinforcing steel erection was inspect	tea, i	liong with locations	and installation of	water stop, cont	traction	and construction
-	joint placement, and dimensions for e	eall)	oian ailu Mail Sectio	n. QA inspection for	erosion and sec	diment	CONTROLS Fee: \$1.3M
	Acid Mine Drainage Reclamation, Go	at Si	te 1 and Laurel Run	. Morgantown	PROFESSIONAL SER		CONSTRUCTION (if appl.)
	wv_			,	2011		2011
е.	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) A	ND SP	ECIFIC ROLE		☑ Check if	project per	formed with current firm
-	NRCS. Construction Inspector represe	nting	NRCS's site plans a	nd specifications or	1-site by direct c	onstruc	tion observation and
	inspection, iviage sure of proper cons	truct	ion of six rock sedin	ient dams: maintaii	ned daily logs an	d photo	ns and documented
	construction methods and progress; n	nonit	tored quantities and	l pay items: resolve	d contractor issu	ies; and	d approved subgrade
	soils, soils used in construction and ea	arthfi	II, compaction meth	ods, and dimension	ns. Fee: \$1.8M		-

· ^;	en un jaran keen on teoria noi 🏝	RESUMES OF KEY PERSON	NEL PROPOSED FOR In E for each key persor	THIS CONTRACT				
12. N/		13. ROLE IN THIS CONTRACT		14, YEARS EXI	PERIENCE C. WITH CURRENT FIRM			
	hael A. MacAllister, PE	Safety/Schedule	33	TOTAL	33			
15 FI	RM NAME AND LOCATION (City and State)				<u> </u>			
	Gannett Fleming, Pittsburgh, PA							
16. EI	DUCATION (DEGREE AND SPECIALIZATION)	17. CUR	RENT PROFESSIONAL REGIS	TRATION (STATE AND DISCEPLE	NE) Tank Tosting Costified			
BS/¢	Civil Engineering	Profe	ssional Engineer/PA;	Underground Storage	Tank resume Certified			
18 0	THER PROFESSIONAL QUALIFICATIONS (Publications: ASCE; Am	mons, Organizations, Training, Awards, etc. Perican Public Transit Associ	مرة ation: American Soci	ety of Highway Enginee	ers; Association for			
Pro	ige Construction and Design; Cons	ulting Engineers Council of F	Pennsylvania	, , , ,				
DIIC	ige constituction and besign, cons	19 RELEVAN	T PROJECTS					
	(1) TITLE AND LOCATION (City and State)			(2) YEAR CO PROFESSIONAL SERVICES	OMPLETED CONSTRUCTION # appl.)			
	New Creek Site 14 Dam Construc	tion-Phase Services,	Section F #2	2013	2013			
	Keyser, WV		00000111111					
a.	(3) BRIEF DESCRIPTION (Brief scope, size, cost,	etc.) AND SPECIFIC ROLE	and marramed and a		formed with current firm ement and			
	NRCS. Construction Project Mana	ger overseeing work of proj	ect personnel and pl	nod parthfill dam Reha	bilitation included			
	administrative services for the re	nabilitation of a 100-foot-hi	gn, 940-100t-1011g 201	neu earmini uam. Nene uitlet works modificati	ons. Fee: \$3M			
	slope stabilization, RCC auxiliary (spillway armoring, a new to	e urani system, anu t	(2) 1LAN 0	OINI ECTED			
	Shenango Intake Dam Rehabilita	ition, Sharon, PA.		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)			
Į				2011	2011			
	(3) BRIEF DESCRIPTION (Brief scope, size, cost,	etc.) AND SPECIFIC ROLE			rformed with current firm			
b.	Aqua Pennsylvania, Inc., Shenang	o Division. Construction Ma	inager on a dam ren	apartings, proper	ed and distributed			
	plant. Observed and documented	d the contractor's daily activ	rities; conducted pro	gress meetings; prepar	sete includina			
	meeting minutes; shop drawing of	coordination; prepared char	ige orders; reviewed	contractors pay reque	construction			
	recommendation for payment; a	nd worked with Aqua Penns	sylvania statt to mini	mize distributions dating	s constituction.			
	Fee: \$300K			(2) YEAR (OMPLETED			
	(1) TITLE AND LOCATION (City and State)	Putlor County DA		PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)			
	Thorn Run Dam Rehabilitation,	outler County, PA		2012	2012			
	(3) BRIEF DESCRIPTION (Brief scope, size, cost	(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE						
C.	Repositioning American Water, Construction Manager overseeing construction inspection staff for dam safety upgrades to a							
	28-foot-high high-hazard raw-wa	iter impounding structure w	ith a 600-foot-long a	oned earthfill embanki	ment. The			
	rehabilitation includes construct	ing RCC embankment overt	opping protection, re	econstructing the sever	ely deteriorated			
	principal spillway, and installing	embankment drainage syste	ems. Fee: \$1.3M		COMPLETED			
	(1) TITLE AND LOCATION (City and State)			PROFESSIONAL SERVICES	CONSTRUCTION (if eppl.)			
	Breaching of Upper and Lower H	Hereford Manor Lake Dams	, Beaver County,	2012	N/A			
	PA			N Charle if anxient a	erformed with ourrent firm			
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cos Pennsylvania Department of Ger	t, etc.) AND SPECIFIC ROLE	Manager for the pro					
441.	downstream of the Lower Dam	neral Services, Construction	ot-high by 12-foot-w	ide hox culvert to conv	ev the reestablished			
	stream under a state highway. P	and constructing a new 6-10	tion verified auantit	ies, utility coordination	, and monitored			
	stream under a state nignway. P	rovided project documenta	ion, vermeu quantit · \$1M	ico, chiney cool amono	,			
_	contractor compliance with the	contract requirements. Fee	, v = 141		COMPLETED			
	Acid Mine Drainage Remediation	on, Goat Run and Laurel Site	es, Morgantown,	PROFESSIONAL SERVICES	CONSTRUCTION (# appl.) 2011			
	WV	,	. •	2011				
	(2) DDIEE DESCRIPTION (Brief score, size cos	at, etc.) AND SPECIFIC ROLE			serformed with current firm			
	NRCS Construction Project Manager overseeing the work of construction inspection personnel and providing project							
	management and administrative services for the remediation of acid mine drainage areas at four abandoned coal mining							
	sites east of Morgantown, Prope	luded open limestone	channels, rock					
e.	sediment dams, limestone pond	ls, culvert installations, road	ls for construction ac	cess, a settling pond, n	nine adit seals,			
G.	subsurface drains, and erosion a	and sediment control featur	es. Inspection was p	erformed for six rock se	ediment dams			
	consisting of cutoff trenches and	d an earth core covered by t	thousands of tons of	limestone boulders; M	aintained daily logs			
	and photos and documented co	instruction methods and pro	ogress; monitored qu	iantities and pay items;	resolved issues with			
	the contractor, and approved si	ibgrade soils, soils used in c	onstruction and eart	hfill, compaction meth	ods, and dimensions.			
	The project included thousands	of feet of open limestone c	hannels and associat	ed collecting ponds the	at allow continuous			
	contact of the acidic water with	varying gradations of limes	tone. Various-sized	culverts were construc	ted and incorporated			
	into the channels. Fee: \$1.9M	,						

		E. RESUMES OF KEY PERSO	ONNEL PROPOSED FO	OR THIS CONTRACT	
12.	NAME	(Complete one Sec	tion E for each key pen		VACALENAC
	Michael Anslinger, MA, RPA	Social Environment/Cultur		a. TOTAL 36	b. WITH CURRENT FIRM
cult	FIRM NAME AND LOCATION (City and State) CCO Let resource analysts, inc, Hurricane, WV EDUCATION (DEGREE AND SPECIALIZATION)				
	/Anthropology (Archaeology)			NAL REGISTRATION (STATE AND	DISCIPLINE)
	A/Anthropology (Archaeology)		Register of Profess	ional Archaeologists	
18.	OTHER PROFESSIONAL QUALIFICATIONS (Put	blications Organizations Training Awards	etc l		
		19 RELEVA	NT PROJECTS		
	(1) TITLE AND LOCATION (City and State)			(2) YEAR (COMPLETED
	Phase I Cultural Resources Sur	vey for the Proposed Brush	Creek Dam Site 14	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	Rehabilitation Project, Beaver	Pond District, Mercer Count	ty, WV	2013	N/A
а	(3) BRIEF DESCRIPTION (Brief scope, size, or	ost, etc.) AND SPECIFIC ROLE		Check if project p	erformed with current firm
e.	NRCS. Project Manager and Pr completed under contract with	i the NRCS. Systematic surve	y of the APE for dire	8.3 acre Section 106 co	empliance project
	archaeological sites in surface of	or buried contexts. No additi	onal archaeological i	nvestigations were reco	mmended: the West
	I virginia State Historic Preserva	tion Office and NRCS concur	red with the recomm	endation. Fee: \$14K	The vient
	(1) TITLE AND LOCATION (City and State)		·		COMPLETED
	Phase I Archaeological Identifi Surface Mine, Kanawha Count	y, WV	sed Red Warrior II	PROFESSIONAL SERVICES 2015	CONSTRUCTION (# appl.) N/A
b.	(3) BRIEF DESCRIPTION (Brief scope, size, co Warrior Energy, LLC. Project Man Article 2 parmit from the W	anager and Principal Investig	ator for proposed 14	1 acre surface mine nei	erformed with current firm rmit, which required
	an Article 3 permit from the Wo	est virginia Department of Ei	nvironmental Protect	tion (WVDEP). Historica	l research and
	systematic survey of the propo	sed permit area did not iden	tify evidence of arch	aeological sites. Based o	on project findings no
	additional archaeological invest	tigations were recommended	d. West Virginia State	Historic Preservation (Office and WVDEP
	concurred with the recommend (1) TITLE AND LOCATION (City and State)	dation. Fee: \$20K			
	Phase I archaeological Identific	ation Survey for the Propos	ad Browton County	PROFESSIONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)
	Airport Runway 1 Approach Ol	estruction Removal Project	Provides County	2015	N/A
İ	wv	ostraction Kemovai Project,	braxion County,		.,,
	(3) BRIEF DESCRIPTION (Brief scope, size, co	est etc I AND SPECIFIC BOLE		M =	
C. 1	Chapman Technical Group. Pro	ject Manager and Principal I	ovestigator for 5.4 ac	Te Section 106 complia	orformed with current firm
	a permit from the U.S. Army Co	rps of Engineers. Huntington	District, Denartmen	t of Transportation Fee	leral Aviation
	Authority (FAA) was identified a	is the lead agency. The proje	ct involved the comr	letion of historical reco	arch and customatic
	archaeological survey. One pre	viously undocumented histo	ric period archaeolog	rical site was discovered	The site was
	recommended not eligible for li	sting in National Register of	Historic Places under	Criterion D. The West	Virginia State Mistoria
	Preservation Office, Huntington	District, and FAA concurred	with the recommen	dation Foo CRK	Aligilia State Historic
	(1) TILE AND LOCATION (City and State)			(2) YEAR C	OMPLETED
ĺ	Phase I archaeological Identific	ation Survey for the Propos	ed Expansion and	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	Modification of the Beech Ridg	e Wind Energy II Project, Gr	eenbrier County,	2015	N/A
ļ			•		
d.	(3) BRIEF DESCRIPTION (Brief scope, size, cos	st, etc.) AND SPECIFIC ROLE		Check if project pe	rformed with current firm
۳.	Invenergy, LLC. Project Manage	er and Principal Investigator f	for Section 106 comp	liance project, with the	USFWS identified as
	the lead agency for Section 106	of the National Historic Pres	ervation Act complia	nce. Historical research	and systematic
	survey was completed for the 9.	.4 acres of upland. No evide	nce of archaeologica	sites was discovered a	nd it was
ĺ	recommended that additional a	rchaeological investigations	were not warranted.	The West Virginia State	Historic
	Preservation Office, Huntington	District and USFWS concurre	ed with the recomme	endation. Fee: \$6K	
	(1) THEE AND LOCATION (City and State)			(2) YEAR C	OMPLETED
	Phase I Archaeological Identific	ation Survey for the Proposi	ed Kincheloe	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
-	Stream and Wetland Mitigation	Bank, Harrison and Lewis C	ounties, WV	2015	N/A
	(3) BRIEF DESCRIPTION (Brief scope, size, cos	t, etc.) AND SPECIFIC ROLE		Check if project per	formed with current firm
е.	West Virginia Bunrootis, LLC. Pr	oject Manager and Principal	Investigator for Sect	ion 106 compliance pro	iect which required
ļ	Section 404 permit form U.S. Ari	my Corps of Engineers, Pittsl	ourgh District. Histori	ical research and system	natic field survey of
	over 60 acres identified five pre-	viously undocumented sites	dating to historic and	prehistoric periods, Sit	es were
	recommended not eligible for lis	sting in National Register of F	listoric Places under	Criterion D. West Virgin	nia State Historic
	Preservation Office and Pittsbur	gh District concurred with th	e recommendation.	Fee: \$15K	

		E. RESUMES OF KEY PERSO	NNEL PROPOSED F	OR THIS CONTRACT	
J K	Problem S. Landin Burger	(Complete one Sect	ion E for each key per	son.)	
12. N	AME	13. ROLE IN THIS CONTRACT		14. YEARS EX	B. WITH CURRENT FIRM
Elîz	abeth Heavrin	Social Environment/Cultura	l Resources	8	5
15 E	IRM NAME AND LOCATION (City and State)				
	S S S S				
100	*Cla				
	al resource analysis, inc, Lexington, KY		47 OUDDENT DOOFEES	ONAL REGISTRATION (STATE AND C	DISCIPLINE)
	DUCATION (DEGREE AND SPECIALIZATION)	-	N/A	SHAL KLOKO HANTON TO THE TWO	noon and y
	History		1975		
MH	IP/Historic Preservation OTHER PROFESSIONAL QUALIFICATIONS (PL	iblications, Organizations, Training, Awards, e	etc.)		
10. 0		19 RELEVA	NT PROJECTS	(0) (540.0)	OMPLETED.
	(1) TITLE AND LOCATION (City and State)		15 11 4	(2) YEAR CO	CONSTRUCTION (if appl.)
	Historic Documentation of Sit		c and Dam No. 1,	2014	N/A
	located southeast of Carrollto				
_	(3) BRIEF DESCRIPTION (Brief scope, size,	cost, etc.) AND SPECIFIC ROLE			rformed with ourrent firm
a.	Kentucky River Authority and	Stantec Consulting Services, In	c. Served as project	t manager and principal i	nvestigator
ļ	overseeing the completion of	state level documentation of	the USACE-owned	ock and dam property, w	nich included
	development of a detailed cor	ntext, archival-quality digital p	hotography, and $\mathfrak m$	leasured drawings of the	ockmasters nouses.
	Fee: \$10K			(0) VEAD C	OMPLETED
	(1) TITLE AND LOCATION (City and State)		- 1	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	Cultural Historic Resource Su		Fork River Rubbie	2014	N/A
	Dam Maintenance Project, N		<u> </u>	<u> </u>	oformed with current firm
b.	(3) BRIEF DESCRIPTION (Brief scope, size,	cost, etc.) AND SPECIFIC ROLE	والعربي والمساور والمتعاديات		
	City of Bardstown. Served as	project manager, principal inv	estigator, and autr	or for this project which i	ovements to the
	documentation and National	Register evaluation of the rub	ble dam to support	a USACE permit for impr	DACILICIES to rise
	structure. Fee: \$5K			(2) YEAR (OMPLETED
	(1) TITLE AND LOCATION (City and State)	f th a Dannaged Kantus	dor Divor Lock and	PROFESSIONAL SERVICES	CONSTRUCTION (if appl.)
	Cultural Historic Resource Su	rvey for the Proposed Kentuc	xy River Lock and	2011	N/A
	Dam No. 8 Renovation Project		unties, Kentucky	✓ Object if a relation	erformed with current firm
C.	(3) BRIEF DESCRIPTION (Brief scope, size,	cost, etc.) AND SPECIFIC ROLE	inal invactigator, a		
	Kentucky River Authority. Ser	ved as project manager, princ	ipai investigator, a	nd addition for this project	provements to the
	documentation and National	Register evaluation of the loc	k and dam to suppo	of a donce permit for my	proventents to the
	structure. Fee: \$4K			(2) YEAR (COMPLETED
	(1) TITLE AND LOCATION (City and State) Historic Resource Study on N	Intional Compton, Administra	tion Confederate	PROFESSIONAL SERVICES	CONSTRUCTION (if appl)
			icion comeaciate	2011	N/A
	Cemeteries and Related Sites			Check if regient to	erformed with current firm
d.	(3) BRIEF DESCRIPTION (Brief scope, size, United States Department of	cost etc.) AND SPECIFIC ROLE	al Historian/Historia		
	United States Department of	veterans Ajjans. Altintectur	Places nominations	and amendments and Hi	storic American
	i i i i i i i i i i i i i i i i i i i	Calabia and Dogistor of Historic		gild differiorite area	
	overseeing the completion of	National Register of Historic	ha United States E	ao: \$159K	
	overseeing the completion of Landscape Survey reports for	National Register of Historic 18 sites located throughout t	he United States. F	ee: \$159K (2) YEAR	COMPLETED
	overseeing the completion of Landscape Survey reports for (1) TITLE AND LOCATION (City and State)	18 sites located throughout t	he United States. F	ee: \$159K (2) YEAR PROFESS:ONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)
_	overseeing the completion of Landscape Survey reports for (1) TITLE AND LOCATION (City and State) Provided Assistance to the D	18 sites located throughout the separtment of Veterans Affair	he United States. F	ee: \$159K (2) YEAR	COMPLETED
_	overseeing the completion of Landscape Survey reports for (1) TITLE AND LOCATION (City and State) Provided Assistance to the D National Historic Preservation	18 sites located throughout the partment of Veterans Affair on Act (NHPA) Compliance Re	he United States. F	ee: \$159K (2) YEAR PROFESS:ONAL SERVICES	COMPLETED CONSTRUCTION (if appl.)
e.	overseeing the completion of Landscape Survey reports for (1) TITLE AND LOCATION (City and State) Provided Assistance to the D National Historic Preservation Fort Thomas, Kentucky Facilit	18 sites located throughout to pertment of Veterans Affair on Act (NHPA) Compliance Resity	he United States. F	ee: \$159K (2) YEAR PROFESS:ONAL SERVICES 2012	COMPLETED CONSTRUCTION (if appl.) N/A
e.	overseeing the completion of Landscape Survey reports for (1) TITLE AND LOCATION (City and State) Provided Assistance to the D National Historic Preservation Fort Thomas, Kentucky Facility (2) PRISE DESCRIPTION (Bridge stores state)	18 sites located throughout to pertment of Veterans Affair on Act (NHPA) Compliance Resity	he United States. F rs to Meet their quirements at the	ee: \$159K PROFESS:ONAL SERVICES 2012 Check if project p	COMPLETED CONSTRUCTION (if appl.) N/A Performed with current firm

Section F





(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 1

21. TITLE AND LOCATION (City and State)

Upper Deckers Creek Site 1 Dam Rehabilitation, Preston County, WV

22. YEAR COMPLETED
PROFESSIONAL SERVICES CONSTRUCTION (if appl.)
Ongoing (2016)
N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER
b. POINT O
NRCS West Virginia State Office
Andy De

b. POINT OF CONTACT NAME
c. POINT OF CONTACT TELEPHONE NO.
Andy Deichert, PE
304-284-7563

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

Goal/Objective:

Assess dam and its appurtenances for compliance with NRCS requirements, evaluate rehabilitation designs, and design selected rehabilitation features.

The NRCS has been involved in assessing the conditions of existing dams, including Upper Deckers Creek Site 1, to determine their eligibility for rehabilitation and assistance under the Watershed Rehabilitation Program. In 2006, the NRCS conducted a preliminary assessment of the dam which determined that the dam was in relatively good condition; however, the development downstream presented a potential significant hazard should the dam suddenly fail. The existence of the downstream development warranted changing the hazard classification of Upper Deckers Creek Site 1 from significant (Class B) to high (Class C). The NRCS conducted a previous preliminary feasibility

study, which concluded that Upper Deckers Creek Site 1 has potential for

additional water storage capacity. NRCS was therefore interested in determining the feasibility of increasing the normal pool elevation.

Upper Deckers Creek Site 1 Dam consists of a 500-foot-long, zoned earthfill embankment. The dam has two spillways — a single-stage principal spillway and an open channel vegetated auxiliary spillway. Gannett Fleming developed work plans for Phase I planning efforts consisting of initiation activities, dams history review, preliminary and final analyses, determination of initial rehabilitation scope, and formulation of rehabilitation options. We performed field surveys and mapping; geotechnical field investigation and interpretation; rock and soil mechanics testing, evaluation and interpretation; existing structural conditions investigation, testing and evaluation; hydrologic analysis; and hydraulic design and proportioning and report preparation.

The subsurface investigation program included 890 LF of soil and rock drilling and sampling, as well as 2,300 LF of geophysical surveys consisting of seismic refraction and multichannel analysis of surface waves. The subsurface investigation also included borehole rock pressure testing and installation of vibrating-wire plezometers. We

Upper Deckers Creek Site 1. To comply with Class C high Hazard design criteria, Gannett Flaming recommended excavating an earth/rock cut auxiliary spillway at the left dam abutment appeared to be the most economical alternative for both maintaining the existing pool and raising the pool to provide additional water supply storage

coordinated the laboratory testing program of soil and rock samples and prepared an investigation report and design calculations associated with NRCS SITES modeling of existing and proposed auxiliary spillways.

The primary deficiency at Upper Deckers Creek Site 1 is inadequate conveyance capacity of the auxiliary spillway. Alternatives considered to increase the conveyance capacity and to bring the dam into compliance with current NRCS high hazard dam design criteria included widening and armoring the existing auxiliary spillway using RCC, armoring the existing spillway with RCC and raising the dam, armoring the embankment with RCC or ACBs so that it could be overtopped, constructing a new auxiliary spillway at left abutment, combinations of the above, and decommission dam (loss of flood control benefits offered by the project).

Of the alternatives evaluated, excavating an earth/rock cut auxiliary spillway at the left dam abutment appeared to be the most economical alternative to maintain the existing pool and raise the pool to provide additional water supply storage. Gannett Fleming is currently providing design services for the dam rehabilitation.

"The AE firm provides professional work in a professional manner."

- Amy Stonebraker, NRCS on evaluation of the Phase I Engineering Planning of Upper Deckers Creek Site 1

Fee: \$999K (est.)

	25 FIRMS FROM SECTION C II	NVOLVED WITH THIS PROJECT
(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
^{a.} 6 Fannett Fleming	Harrisburg, PA; Pittsburgh, PA	Prime

(Present as many projects as requested by the agency, or 10 projects, if not specified

EXAMPLE PROJEC MEY NUMBER

Complete one Section F for each project.) 21. TITLE AND LOCATION (Oty and State)

New Creek Site 14 Dam, Grant County, WV

CONSTRUCTION (if app PROFESSIONAL SERVICES 2013 2013

23 PROJECT OWNER'S INFORMATION

a PROJECT OWNER NRCS West Virginia State Office b. POINT OF CONTACT NAME Andy Deichert, PE

c. POINT OF CONTACT TELEPHONE NO.

304-284-7563

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

Goal/Objective: Assess dam and its

SUSPICITE

appunenances for compliance with MRCS requirements. design rehabilitation features, and provide construction

New Creek Site 14 is an NRCS earth embankment dam constructed in 1963 that provides flood control and water supply for the City of Keyser, WV. The dam is 114 feet high and 940 feet long, impounding approximately 1,070 acre-feet of water at normal pool. The outlet works consist of an 80-foot-high riser intake structure with a 30-inch outlet conduit and plunge pool. The auxiliary spillway is grass-lined.

Gannett Fleming performed planning, analysis, design, construction drawings, and specifications and construction management for the dam. We conducted a detailed hydrologic study, auxiliary spillwa, integrity analyses, and detailed dam break hydraulic analysis of New Creek and its floodplain. Tasks

included reviewing existing hydrologic and hydraulic (H&H) data; collecting topographic data; developing several SITES H&H models; performing a site visit; completing an approximate survey of channel obstructions, including 22 bridges; and developing a detailed hydraulic model using HEC-GeoRAS, HEC-RAS, and ArcGIS software. The model was run to simulate failure of the dam during both sunny day and hydrologic loading conditions in order to predict the flood extents and water surface elevations of outflow from the reservoir for those scenarios.

Several sustainable features were incorporated in the New Creek Site 14 Dam rehabilitation project. Ground-granulated blast furnace slag, a byproduct of the steel manufacturing industry, was used to replace 42.5 percent of the cement in all conventional concrete used for this project. In addition, fly ash, a byproduct of coal-fired power generation, was used to replace 50 percent of the cement in all RCC for this project. Using these recycled materials alone resulted in significant energy and pollution savings by decreasing the Portland cement usage on this project by approximately 2,850 tons which directly results in a reduction of approximately 2,850 tons of CO2 emissions and eliminates the need to landfill these industry by-products. On this same project, concrete from the old riser structure was recycled as fish habitat to be placed in the reservoir and the excavated materials from the expanded auxiliary spillway were used to improve the stability of the upstream and downstream embankment slopes.



RCC Spillway at New Creek Site 14 Dam. Fly ash, a byproduct of coal-fired power generation, was used to replace 50 percent of the cement in all RCC used for this project. Using recycled materials resulted in significant energy and pollution savings by decreasing the Portland cement usage on this project by approximately 2,850 tons which results in CO? emissions and eliminates the need to landfill these industry by-products.

- "...Gannett Fleming is a well managed and highly qualified dam design firm. The firm has worked on several projects for USDA-NRCS in West Virginia and has consistently provided excellent service in a timely fashion."
- Amy Stonebraker, Supervisory Contract Specialist, NRCS on ACASS evaluation of Final Design of New Creek Site 14 Rehabilitation

Fee: \$3M

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

(1) FIRM NAME Eannett Fleming

(2) FIRM LOCATION (City and State) Harrisburg, PA; Pittsburgh, PA (3) ROLE Prime

(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

21. TITLE AND LOCATION (City and State)

Supplemental Watershed Plan/EAs for Upper Brushy Creek Watershed FRS 7, 13A and 17, East Fork Above Lavon Watershed FRS 1A, 2B, 4 and 17, and Salt Creek and Laterals Watershed FRS 13, Collin, Grayson, Williamson, Wise, and Parker Counties, TX

22, YEAR COMPLETED PROFESSIONAL SERVICES CONSTRUCTION (if appl.) 2005 N/A

23. PROJECT OWNER'S INFORMATION

NRCS Texas State Office

b. POINT OF CONTACT NAME Ronnie G. Skala, PE, CFM BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost) c. POINT OF CONTACT TELEPHONE NO.

254-742-9872

Goal/Objective:

Bring high hazard facilities into compliance with current NRCS and State of Texas dam safety criteria.

As a subconsultant, Gannett Fleming provided engineering and economic analysis services to the Texas NRCS for rehabilitation planning of aging NRCS dams. The projects included preparation of Supplemental Watershed Plan/Environmental Assessments for eight dams, including FRS's 7, 13A and 17 of the Upper Brushy Creek Watershed, FRS 1A, 2B, 4 and 17 of the East Fork above Lavon Watershed, and FRS 13 of the Salt Creek and Laterals Watershed.

The primary purpose of these planning studies was to identify the most cost-effective approach for bringing the dams into compliance with current NRCS and State of Texas dam safety criteria. The dams, constructed under the NRCS

Watershed Protection program, originally had sparsely populated downstream floodplains used primarily for agricultural production. Significant urban development has occurred downstream and upstream from these dams, resulting in a high hazard classification.

Alternatives considered included the Future without Project (controlled breaches), relocation of at-risk properties, decommissioning, and rehabilitation. Rehabilitation alternatives consisted of providing additional principal and auxiliary spillway capacity to meet current performance and safety standards, and to extend the service life and flood control benefits for 100 years.

Since the dam sites have earth-lined auxiliary spillways, the NRCS required an assessment of each dam's spillway erodibility. Our hydraulics and geotechnical engineers developed and executed the SITES computer model to assess each spillway's erodibility potential for a range of flood events. Geologic profiles were constructed, based on borings located in the existing as-built construction drawings. We documented the analysis and provided recommendations for armoring the dams to alleviate erosion failure concerns.

Gannett Fleming conducted benefit-cost analyses for each dam to evaluate alternatives retained for detailed study and identify the National Economic Development Alternative, in accordance with the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G), the Natural Resource Economics Handbook Part 611 - Water Resources and the National Watershed Manual. Our firm quantified the benefits of maintaining flood protection for agriculture, roads, bridges, and residential and commercial properties. The NRCS URB1 model was used to estimate the benefits of continuing flood protection to downstream structures. Our firm also quantified the benefits that the sediment pools behind several dams provided, including recreation,



Emergency spillway, FRS 13A. Gannett Fleming prepared Supplemental Watershed Plan/Environmental Assessments for eight FRS's.



Upper Brushy Creek FRS 7, sediment pool. Our firm also quantified the benefits that the sediment pools behind several dams provided, including recreation. water supply, stormwater detention, and an aesthetic/amenity value to adjacent properties.

water supply, stormwater detention, and an aesthetic/amenity value to adjacent properties. Converting the benefits and costs to an annual average equivalent, we identified the alternative that would maximize net benefits.

Fee: \$273K

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT (1) FIRM NAME (2) FIRM LOCATION (City and State) (3) ROLE **Gannett Fleming** Harrisburg, PA Subconsultant

(Present as many projects as requested by the agency, or 10 projects, if not specified Complete one Section F for each project)

EXAMPLE PROJEC KEY NUMBER

21. TITLE AND LOCATION (City and State)

White Tanks FRS No. 4 Supplemental Watershed Plan/EA; McMicken Dam Rehabilitation; Powerline, Vineyard Road and Rittenhouse Supplemental Watershed Plan/EA; and Saddleback Dam Mitigation, Maricopa and Pinal Counties, AZ

CONSTRUCTION (if appl. PROFESSIONAL SERVICES N/A 2015

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER Flood Control District of Maricopa County (FCDMC) b. POINT OF CONTACT NAME Tom Renckly

c. POINT OF CONTACT TELEPHONE NO 602-506-8561

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

Goals/Objectives:

Bring high hazard facilities into compliance with current NRCS and State of Arizona dam safety criteria.

White Tanks FRS No. 4 Supplemental Watershed Plan/Environmental Assessment and **Preliminary Design Services Gannett Fleming provided** engineering and planning services for the rehabilitation of White Tanks FRS No. 4. Our firm is also developing the alignment and

preliminary design for the inflow and outflow channels to convey flood waters along the 12-mile corridor connecting White Tanks FRSs 3 and 4 with the Gila River. Technical analyses applied on this project include seepage analysis, dam break analysis, filter and drain compatibility, 2-D dynamic routing, SITES modeling, and slope stability analysis.

The FRS is a low-height homogenous earth dam with two principal gated corrugated metal pipe outlets and two earth-cut, unlined emergency spillways. The structure has been classified as a high hazard structure by the Arizona Department of Water Resources and NRCS due to downstream development. Gannett Fleming and FCDMC conducted dam inspections and investigations that revealed transverse cracking. Gannett Fleming determined that a central filter/drain previously constructed had used filter materials not compatible with the drain materials, and that the embankment/filter was marginally acceptable based on current criteria.



White Tanks FRS No. 4. Technical analyses applied on this project include seepage analysis, dam break analysis, filter and drain compatibility, 2-D dynamic routing, hydrologic modeling, SITES modeling, slope stability analysis, and risk analysis.

Our firm prepared a Supplemental Watershed Plan/EA to identify and evaluate alternatives for rehabilitation or removal of the FRS. We facilitated alternatives analysis and risk analysis workshops with project decision makers that achieved consensus on alternative selection. We conducted NEPA-related public involvement activities, and documented the social, cultural and natural resource impacts of each alternative.

In support of the EA, we conducted a benefit-cost analysis in accordance with NRCS guidance to determine the economic impacts of a series of potential flood events under each alternative. HEC-1 and HEC-RAS modeling was conducted to support the benefit-cost analysis. Our firm used the NRCS URB1 model to measure the benefits of maintaining flood protection for residential, commercial, and institutional properties, and GIS analysis to measure benefits to agriculture, roadways, and other infrastructure. We converted future benefits and costs to average annual equivalents and identified the National Economic Development alternative.

Fee: \$1.7M

McMicken Dam Rehabilitation

As part of a team, Gannett Fleming is providing engineering services for the rehabilitation of McMicken Dam, a 9.5-mile-long homogenous earthen embankment dam.



McMicken Dam Rehabilitation. The project is intended to eliminate or mitigate current dam safety deficiencies and failure modes caused by aging infrastructure land subsidence, earth fissuring and urban encreachment.

The project is intended to eliminate or mitigate current dam safety deficiencies and failure modes caused by aging infrastructure, land subsidence, earth fissuring and urban encroachment. The rehabilitation includes modifications to several structures, including fissure risk zone remediation embankment, fissure risk zone and non-fissure risk zone embankment sections, emergency spillway, principal outlet, 6-mile outlet channel, and 4-mile outlet wash. Gannett Fleming is performing final design geotechnical investigations, developing final mitigation alternatives, and preparing construction plans and specifications for final design of each of the project components.

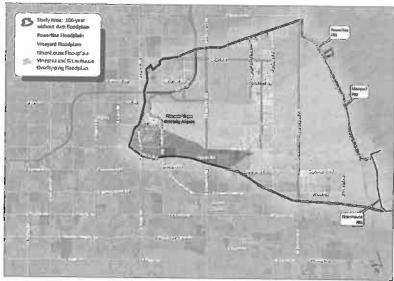
Fee: \$489K

Powerline, Vineyard Road, and Rittenhouse Supplemental Watershed Plan and Environmental Assessment

As a subconsultant, Gannett Fleming performed economic analyses in support of the Watershed Plan/EA for the rehabilitation of three dams in Pinal County, AZ. The analyses were prepared in accordance with the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies* (P&G), the *Natural Resource Economics Handbook Part 611 – Water Resources* and the December 2009 *National Watershed Manual*.

Gannett Fleming used the NRCS URB1 model and GIS analysis to measure the benefits of maintaining flood protection for agriculture, residential, commercial, and institutional properties; roadways; and other infrastructure. The analysis included measuring the impact of a regional airport shutdown due to flooding. Marshall and Swift Valuation Service cost data was used to estimate structure and content values of large institutional structures for model input. Our firm also measured the administrative cost savings to the National Flood Insurance Program (NFIP) from a reduction in the number of properties that must participate under each alternative.

Gannett Fleming calculated net economic benefits and a benefit-cost ratio for each alternative using the federal water project discount rate, and determined the National Economic Development alternative. We were able to demonstrate that a positive benefit-cost ratio was achieved for each individual FRS by appropriately distributing benefits between the three dams.



Powerline, Vineyard Road and Rittenhouse Dams' downstream floodplains under the 100-year Without Dam scenario. Gannett Fleming used the NRCS URB1 model and GIS analysis to measure the benefits of maintaining flood protection.

Fee: \$106K

Saddleback Dam Mitigation

Saddleback FRS, a 5-mile compacted earth-fill dam with a principal spillway and four irrigation outlets, has experienced numerous erosion holes and longitudinal cracking. The FCDMC identified the need to modify the embankment to mitigate cracking and retained Gannett Fleming to perform geotechnical investigations, develop mitigation alternatives, and prepare final design plans and specifications. Gannett Fleming investigated three potential causes of the observed distress: differential settlement of collapsible foundation soil, incompatibility of the filter/drain with the overlying embankment soil, and settlement of the potentially loosely placed filter/drain. We performed failure modes and effects analyses to assess the mitigation alternatives for the central filter/drain. Final design drawings and specifications are currently being developed.

Our firm also prepared an economic assessment of flood damages in the 100-year storm event under With Dam and Without Dam conditions, based on FLO-2D modeling conducted for the project. The purpose of the analysis was to provide quantitative input on potential damages to use in the conceptual development of rehabilitation alternatives. The analysis included assessment of flood damages to a downstream natural gas-powered combined-cycle electric generating plant.

Fee: \$455K

	25 FIRMS FROM SECTION	ON C INVOLVED WITH THIS PROJECT
a. 👫	(2) FIRM LOCATION (City and State)	(3) ROLE Prime; Subconsultant

(Present as many projects as requested by the agency, or 10 projects, if not specified Complete one Section F for each project.)

EXAMPLE PROJEC KEY NUMBER

21. TITLE AND LOCATION (City and State)

Fredonia FRS Engineering Study, Fredonia, AZ

PROFESSIONAL SERVICES

CONSTRUCTION (if app

2009

N/A

a PROJECT OWNER Town of Fredonia **b. POINT OF CONTACT NAME** Steven L. Winwand, Mayor

23 PROJECT OWNER'S INFORMATION

c. POINT OF CONTACT TELEPHONE NO.

928-643-7241

Goal/Objective:

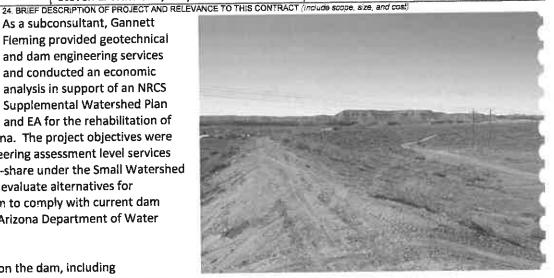
Evaluate alternatives for rehabilitating or modifying the dam to comply with current dam safety criteria from both the NRCS and ADWR

As a subconsultant, Gannett Fleming provided geotechnical and dam engineering services and conducted an economic analysis in support of an NRCS Supplemental Watershed Plan and EA for the rehabilitation of

the Fredonia FRS in northern Arizona. The project objectives were to: (1) provide planning and engineering assessment level services for the dam to allow a federal cost-share under the Small Watershed Rehabilitation Program, and (2) to evaluate alternatives for rehabilitating or modifying the dam to comply with current dam safety criteria from the NRCS and Arizona Department of Water Resources (ADWR).

Our firm reviewed pertinent data on the dam, including engineering design and geotechnical reports, as-built plans, ADWR groundwater records, monitoring data, and construction qualityassurance results. Our staff conducted the failure modes and effects analysis on the structure. Additional responsibilities involved providing support for geotechnical design and construction reports on filter design, foundation soils, borrow material, and regional geology. Our firm performed alternatives analyses for concept-level design of structural alternatives including dam raise, foundation treatments, and erosion protection. The action alternative retained for detailed study consisted of converting the dam to a levee to maintain 100-year flood protection.

Gannett Fleming also conducted a cost-benefit analysis to determine the economic impact of a series of flood events on the town of Fredonia. We used GIS-based tax assessment data, aerial photography, National Agricultural Statistics Service cropland GIS data layers, and GIS land use data to identify downstream structures. The values of large institutional structures not captured in the assessment data were measured on a square foot basis using Marshall and Swift Valuation Service cost data. Our firm used GIS analysis and the NRCS URB1 Model to measure the benefits of maintaining flood protection for agriculture, residential, commercial, and institutional properties; roadways; and other infrastructure.



Fredonia FRS. Our team provided support for geotechnical design and construction reports on filter design, foundation soils, borrow material, and regional geology.



Affected downstream property, Fredonia FRS. Our firm used GIS analysis and the NRCS URB1 Model to measure the benefits of maintaining flood protection for agriculture, residential. commercial, and institutional properties; roadways; and other infrastructure.

Fee: \$98K

25 FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

(1) FIRM NAME Sannett Fleming

(2) FIRM LOCATION (City and State) Harrisburg, PA

(3) ROLE

Subconsultant

(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)

Lost River Watershed Dams, Site No. 16, Hardy County, WV

22. YEAR COMPLETED

ROFESSIONAL SERVICES CONSTRUCTION (if appl.)

N/A

23 PROJECT OWNER'S INFORMATION

a. PROJECT OWNER

NRCS West Virginia State Office

b. POINT OF CONTACT NAME

Andy Deichert PF

b. POINT OF CONTACT NAME
c. POINT OF CONTACT TELEPHONE NO.
304-284-7563

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

Goal/Objective:

Design new earth embankment darn to create flood control, water supply and recreation reservoir. Lost River Site 16 is one of five flood control structures originally planned to control flood damage in the Lost River Watershed. The site has a contributing drainage area of 11.88 square miles. Gannett Fleming provided hydraulic analysis, surveying, environmental studies, and preliminary

and final design for the proposed multi-purpose dam, which will provide both flood control and water supply storage with some

recreational benefits. The proposed 90-foot-high, 2,000-foot-long zoned earth embankment dam has a principal spillway featuring a riser structure and principal spillway conduit through the dam. The dam would also have an auxiliary spillway cut into rock. Gannett Fleming designed the structure to retard the runoff from a 10-day duration, 100-year frequency storm without discharge occurring in the auxiliary spillway. We also designed the structure to pass the Freeboard Hydrograph without overtopping the dam. We designed the reservoir to provide adequate water supply storage to withstand the drought of record.

the Ind

Services provided to date include aerial and ground surveys and mapping, subsurface exploration, laboratory testing of soil and rock samples, design of the dam and ancillary facilities, SITES analysis of the auxiliary spillway, preparation of contract drawings and deration, 100-year frequer specifications, construction cost estimating, and support services during construction. We are currently assisting the NRCS with permit application support for the Department of the Army, Clean Water Act Section 404 Individual Permit.

Lost River Site No. 16 Riser Rendering. Gannett Fleming designed the structure to retard the runoff from a 10-day duration, 100-year frequency storm without discharge occurring in the auxiliary spillway.

"We repeatedly have selected Gannett Fleming to provide engineering services for our projects because they are a recognized leader in the field of dam engineering, are responsive to our needs, have consistently delivered quality services, have the capacity to work on large projects in a deadline driven environment, and can adjust their schedules for execution of the work to meet our needs."

- Andy Deichert, NRCS

Pamela Yost of the NRCS West Virginia Office gave Gannett Fleming a **perfect Client Satisfaction Evaluation (CSE) score** for services provided during the Lost River No. 16 task order assignment.

Fee: >\$2M

25 FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT				
	(2) FIRM LOCATION (City and State)	(3) ROLE		

(Present as many projects as requested by the agency, or 10 projects, if not specified Complete one Section F for each project ! 28 EXAMPLE PROJECT REY NUMBER 7

22. YEAR COMPLETED
21. TITLE AND LOCATION (Gry and State)

Elkwater Fork Water Supply Dam, Randolph County, WV

23. PROJECT OWNER'S INFORMATION

e. PROJECT OWNER b. POINT OF CONTACT NAME c. POINT OF CONTACT NAME 304-284-7563

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

Goal/Objective: Design new RCC Dam to create water supply and recreation reservoir. During the preparation of a countywide water resource assessment in the late 1990s for the NRCS, Gannett Fleming identified Elkwater Fork as a potential site for the creation of a new water supply reservoir. The site was one of about 40 potential reservoir sites identified and investigated. The study concluded that the Elkwater Fork site was the best location for a new reservoir to provide an adequate source of drinking water to more than 20,000 Randolph County residents. Subsequently, NRCS selected our firm to design a new 130-foot-high RCC dam on Elkwater Fork in the Upper

Tygart Valley Watershed. The dam provides a 3.0-mgd water supply reservoir and offers 54 acres of recreation opportunities for families and visitors.

NRCS chose Gannett Fleming for this project because of our experience; our capability to design the project within a constrained construction schedule and funding limitations; and our ability to provide comprehensive geotechnical, environmental, and drilling services throughout investigation, design, and construction phases.

Our firm completed surveys and mapping; subsurface exploration and testing; hydraulic proportioning; stability analyses; safe yield analyses; preliminary dam design; preparation of an Operation, Inspection, and Maintenance Plan; as well as final contract drawings and specifications. Gannett Fleming was selected for this contract because of our experience, our ability to design the project within a constrained construction schedule and funding limitations, and our ability to provide comprehensive geotechnical, environmental, and drilling services throughout investigation, design, and construction phases. All of our work was subject to independent technical review by the NRCS National Technical Center in Fort Worth, Texas. The dam was completed in 2011 at a construction cost of about \$32 million.

The 130-foot-high RCC Elkwater Fork Water Supply Dam was built to improve health and human safety by assuring a reliable source of drinking water for more than 20,000 residents of Randolph County, WV. The dam provides a 3.0-mgd water supply reservoir and offers 54 acres of recreation opportunities for families and visitors.

The dedication of the Elkwater Fork Water Supply Dam was held on August 22, 2012. The event was open to the public and was well attended by hundreds of people, including political and business leaders. This \$33 million, 130-foot-high roller-compacted concrete dam on Elkwater Fork in the Upper Tygart Valley Watershed was designed by Gannett Fleming for the NRCS.

Fees: \$1.5M





Elkwater Fork Water Supply Dam. NRCS chose Gannett Fleming for this project because of our experience; our capability to design the project within a constrained construction schedule and funding limitations; and our ability to provide comprehensive geotechnical, environmental, and drilling services throughout investigation, design, and construction phases.

	25. FIRMS FROM SECTION	ONIC INVOLVED WITH THIS PROJECT
a. Eannett Fleming	(2) FIRM LOCATION (City and State) Harrisburg, PA	(3) ROLE Prime

(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)

Various Dam Safety and Water Resources Engineering Assignments, Chester County, PA

22. YEAR COMPLETED PROFESSIONAL SERVICES CONST

PROFESSIONAL SERVICES CONSTRUCTION (if appl.)
Ongoing (2016)
N/A

a. PROJECT OWNER

Chester County Water Resources Authority (CCWRA) 23 PROJECT OWNER'S INFORMATION

b. POINT OF CONTACT NAME Janet L. Bowers, PG

c. POINT OF CONTACT TELEPHONE NO.

610-344-5400

Goal/Objective:

Provide wide range of engineering services to assess and maintain NRCS dams owned and operated by CCWRA.

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

CCWRA operates, manages, and maintains four regional flood control dams. These dams are
earthen embankment structures constructed by NRCS between 1972 and 1994. Gannett Fleming is
providing consulting and field services to assist CCWRA in the areas of dam engineering design,
safety, management and operations; reservoir management and water supply release operations;
wetland services; stormwater engineering design and construction management; land surveying;
land management; geotechnical and foundation engineering; GIS and CADD; and other related
field, engineering, and technical services. In addition, we are advising and assisting CCWRA in

comprehending and complying with all relevant federal, state, and other regulations pertaining to the flood control facilities. Work is assigned on a task order basis and all assignments performed were completed on schedule in compliance with all CCWRA requirements.

Our firm prepared draft bid form and technical specifications for the service maintenance of Hibernia Dam's conservation release flow control valve for a three-year contract that includes two service events per year. Additionally, we performed investigations, evaluations, monitoring, analysis, and interpretation of elevated piezometer readings and Hibernia Dam to assist in the determination of cause and effects of the higher than normal piezometric readings. Work completed involved manually monitoring existing piezometer instrumentation twice weekly at Hibernia Dam and observing and documenting embankment conditions with photographs. We are currently planning additional subsurface investigations.

Gannett Fleming manually monitored and interpreted existing piezometric instrumentation at Beaver Creek and Struble Dams. Twelve piezometers, two per casing, are in place at each dam. The discharge rate from the embankment drain outlets at each dam was monitored concurrent with the piezometer monitoring, and



Hibernia Dam. Gannett Fleming performed investigations, evaluations, monitoring, analysis, and interpretation of elevated piezometer readings to assist in the determination of cause and effects for the higher than normal piezometric readings.

documentation was recorded in tabular and graphical form. Our firm also provided riser monitoring for Beaver Creek Dam. We surveyed six structure settlement monitoring "points" to a 0.01 horizontal and vertical accuracy with respect to established control, and prepared a brief letter report summarizing the survey results.

We conducted additional investigations, evaluation, and monitoring at Struble Dam. Our firm reviewed existing NRCS construction documents and records, performed topographic surveys, conducted a geophysical survey, and evaluated the compatibility of embankment soils, fine drain fill, and coarse drain fill. The geophysical surveys included two-dimensional electrical resistivity, self-potential, and infrared thermal imaging to identify seepage along a 700-foot section of the earthen embankment. Our firm completed the evaluation and prepared a letter report to recommend improvements for embankment drainage and slope stability.

We are conducting annual inspections and drafting revised emergency action plans (EAPs) for the four existing earthen embankment dams, as well as preparing inspection reports in accordance with Pennsylvania Department of Environmental Protection requirements. Revised draft EAPs included updated inundation mapping in accordance with current EAP guidelines and were submitted to CCWRA for comment.

Fee: \$2.5M (est.)

	25 FIRMS FROM SECTION	ON C INVOLVED WITH THIS PROJECT
(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
a. 🙆 Gannett Fleming	Harrisburg, PA; Valley Forge,	Prime
	PA	

(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 9

21. TITLE AND LOCATION (City and State)

Renwick Dam Rehabilitation, Cavalier, ND

22. YEAR COMPLETED
PROFESSIONAL SERVICES CONSTRUCTION (if appl

23. PROJECT OWNER'S INFORMATION

a PROJECT OWNER

NRCS Bismarck State Office

D. POINT OF CONTACT NAME

Scott Davis

701-530-2087

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

Goal/Objective:Review NRCS rehabilitation design and provide

construction support services.

In 2010, Gannett Fleming performed an independent review of the design, plans, and specifications for Renwick Dam. This review provided important recommendations, which were incorporated into the final design documents for this project. A key feature of this rehabilitation project is a stepped, RCC spillway over the embankment. Dam design review tasks for this project included review of the NRCS project design folder; identification of potential dam safety deficiencies not addressed; identifying non-compliance with NRCS design criteria, omissions,

inadequacies, or errors; and recommendation of corrective actions and assessment of construction access. Our firm provided documentation of adequacy of structural, hydrologic, hydraulic, seepage control, stability, zoning, seismic and instrumentation systems design; environmental considerations; construction drawings; specifications; bid schedules; cost estimates; construction

evaluations, including construction schedules and construction quality assurance plans; and operation and maintenance plans.

Phase I raised portions of the embankment 5.4 feet and pre-loaded portions of the embankment where the RCC, stepped chute spillway will be located and the accompanying conventional concrete sidewalls. Phase il included the installation of the stepped chute spillway, conventional concrete sidewalls, a slight modification to the principal spillway riser, and completion of the earthwork to raise the top of dam 5.4 feet over the remainder of the alignment. Gannett Fleming provided construction inspection services during Phase II.

Services included:

- Maintaining a daily job diary with photographs
- Providing quality assurance testing
- Performing surveying checks and reviewing and verifying contractor survey notes for compliance
- Enforcing safety regulations
- Inspection contractor's quality control system
- Conducting wage interviews
- Inspecting pollution control efforts
- Documenting changes to project on as-built drawings
- Communicating with NRCS on a regular basis.





Renwick Dam. A key feature of this rehabilitation project is a stepped, RCC spillway over the embankment.

Fee: \$466K (est.)		
	25. FIRMS FROM SECTION	N C INVOLVED WITH THIS PROJECT
(1) (1)	(2) FIRM LOCATION (City and State) Harrisburg, PA	(3) ROLE Prime

(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 10

21. TITLE AND LOCATION (City and State)

Salem Fork Sites 11 and 11A Phase I Dam Rehabilitation Planning, Preston and Harrison Counties, WV

22. YEAR COMPLETED

CONSTRUCTION (if appl. N/A

23 PROJECT OWNER'S INFORMATION

b. POINT OF CONTACT NAME NRCS West Virginia State Office Andy Deichert, PE

c. POINT OF CONTACT TELEPHONE NO.

304-284-7563

2014

Goal/Objective:

a. PROJECT OWNER

Assess dams and their appurtenances for compliance with NRCS requirements and develop rehabilitation alternatives to address deficiencies.

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (Include scope, size, and cost) The purpose of the original Salem Fork Watershed Work Plan Agreement signed in 1954 was to outline land treatment and structural measures necessary to achieve erosion control and alleviate flood damage. Seven floodwater retarding dams were constructed on tributaries within the Salem Fork Watershed as part of this work plan. Salem Fork Site 11 is a single-purpose flood control dam. Uncontrolled drainage area of the structure is 148.1 acres. Salem Fork Site 11A, which is located about 0.5 miles upstream of the dam, controls an additional 181.2 acres of drainage area. The dam and its appurtenances consist of a 225-foot long, zoned earthfill embankment with a maximum height of 29.4 feet. The dam has two spillways: a two-stage principal spillway riser structure and an

open channel, vegetated auxiliary spillway.

Gannett Fleming developed work plans for the completion of Phase I planning efforts generally consisting of initiation activities, dams history review, preliminary and final analyses of existing dams, determination of initial rehabilitation work scope, and formulation of rehabilitation options. Tasks included field surveys and mapping, geotechnical field investigation and interpretation, rock and soil mechanics testing, evaluation and interpretation, existing structural conditions investigation, testing and evaluation, hydrologic analysis, hydraulic design and proportioning, and report preparation.

We conducted a detailed hydrologic study, auxiliary spillway integrity analyses, and dam break hydraulic analyses of the dams and their floodplain. Tasks included reviewing existing H&H data, collecting topographic data, developing several SITES H&H models, performing a site visit, completing an approximate survey of channel obstructions, and developing a detailed hydraulic model using HEC-GeoRAS, HEC-RAS, and ArcGIS software. The dam breach model was run to simulate failure of the dam during both sunny day and hydrologic loading



Salem Fork Site 11A. Gannett Fleming evaluated several spillway rehabilitation alternatives to comply with Class C high hazard design criteria and recommended armoring the auxiliary spillway.

conditions to predict the flood extents and water surface elevations of outflow from the reservoir for those scenarios. We used the subsurface exploration test borings drilled to evaluate subsurface conditions beneath the dams' auxiliary spillways to develop SITES integrity analyses.

Following the analyses and investigations, Gannett Fleming developed several potential rehabilitation alternatives. Assuming the dam must satisfy Class C (high hazard) design criteria, the only current known deficiency is the potential breaching of the auxiliary spillway. The potential rehabilitation alternatives considered for Salem Fork Site 11 assume that Salem Fork Site 11A is not decommissioned. Alternatives considered for Salem Fork Site 11 included armoring the auxiliary spillway to prevent erosion and breaching of the spillway. Armoring the spillway using ACBs appears to be the preferred option. We also evaluated widening the existing auxiliary spillway and flattening the spillway chute using the SITES model, but found this impractical because of the site conditions. We also presented decommissioning or breaching the dam as possible alternatives.

Fee: \$200K

	25. FIRMS FROM SECTION	ON C INVOLVED WITH THIS PROJECT
a. Gannett Fleming	(2) FIRM LOCATION (City and State) Harrisburg, PA; Pittsburgh, PA	(3) ROLE Prime

Section G





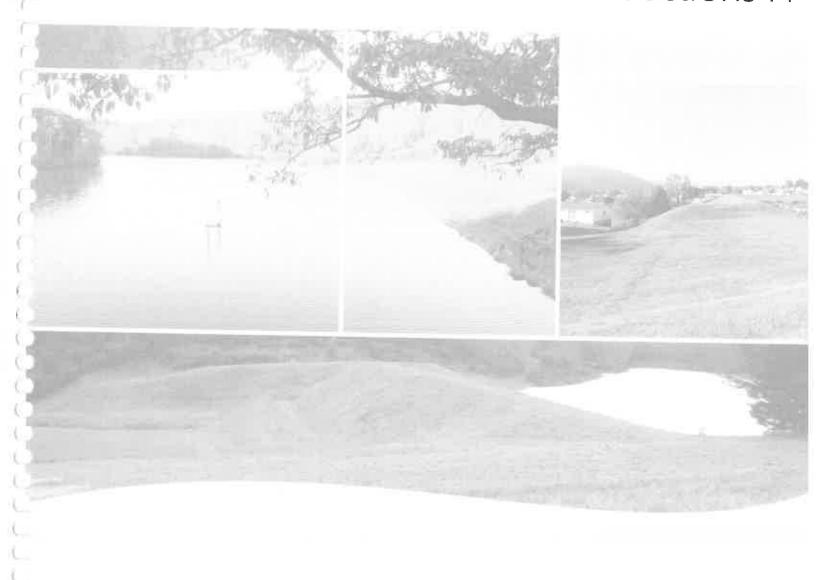
ISO 9001:2008

	G. KEY PERSONNEL PARTIC	CIPATION	IN EXAM	MPLI	E PRO	JJEC.	rs	П					
26. NAMES OF KEY PERSONNEL (From Section E, Block 12)	27. ROLE IN THIS CON (From Section E Block 13)			(Fill in	"Exan g table	nple Pr e. Plac cipatio	rojects ce "X" n in sa	TS LIS Key" under	section projec	n belov its key ir role.	v befo numb)	re er for
	Project Manager; Dam Reh	abilitatio	n				4	_5	6	7	8	9	10
Paul G. Schweiger, PE, CFM	Alternatives; Public Involve			Х	X	X	X			X	X	X	X
Rodney E. Holderbaum, PE, PL PS	S, Project Principal & Quality Assurance/Quality Control			Х	х					х	х	Х	х
Eric C. Neast, PE	Planning Studies - Task Mar Pollution Control	nager;			Х					х	х		
Donald P. Roarabaugh, PE	Upper Deckers Creek Site 1 Oversight - Task Manager; I Rehabilitation Alternatives			Х	Х	x			х	х	х	Х	
Robert T. Saber, PE	Dam Rehabilitation Alterna	tives			Х				Х	Х	Х		
Timothy W. Johnston, PE	Dam Rehabilitation Alterna	tives		Х	Χ					Х	х		х
William J. Franz, PE, PG	tives	1	x	Χ						х	Х	Х	
Amanda J. Hess, PE, CFM	Hydraulics and Hydrology			х			Х		х	х	х		х
Benjamin P. Israel-Devadason, PE, CFM	Hydraulics and Hydrology		;	х	Х		Х		Х		х		Х
Gregory L. Richards, PE, CFM	Hydraulics and Hydrology			х	Х						х		Х
William J. Kingston III, CFM	Hydraulics and Hydrology												
Cari R. Beenenga, PE	Subsurface Investigation/Ge Evaluation; Submittal Review		,	х	Х						Х		Х
David M. Snyder, PE	Subsurface Investigation/Ge Evaluation; Foundation Insp		,	х	Х				Х	х	Х		Х
Jeremy S. Robinson, PG	Subsurface Investigation/Ge Evaluation		,	х	Х				х		Х		
Edward J. Barben, PE	Subsurface Investigation/Ge Evaluation; Foundation Insp)	х	х				Х		х		Х	
Andrew J. Smithmyer, PG	Subsurface Investigation/Ge		,	x	x				Х	Х	Х		X
Katherine E. Sharpe, AICP	NEPA – Lead; Economics/GIS	 S				Х	х	Х					
Steven J. Wittig, CE	NEPA								х		х		
	29 EXAMPLE	PROJEC	TS KEY									-	
NO. TITLE OF EXAMPLE I	PROJECT (FROM SECTION F)	NO.							T (FROM				
and Construction, Preston	1 Dam Rehabilitation Planning County, WV	6	Lost Riv	ver \	Wate	rshed	d Dam	ıs, Sit	e No.	16, H	ardy (Count	γ,
New Creek Site 14 Dam, G	rant County, WV	7	Elkwate	er Fo	ork W	/ater	Supp	ly Dai	m, Rai	ndolp	h Cou	inty. \	NV
Creek Watershed FRS 7, 13 Lavon Watershed FRS 1A, and Laterals Watershed FR	Plan/EAs for Upper Brushy BA and 17, East Fork Above 2B, 4 and 17, and Salt Creek IS 13, Collin, Grayson, Ker Counties, TX	8	Various Assignm	s Da	m Sa	fety a	ind W	ater	Resou				
White Tanks FRS No. 4 Sup McMicken Dam Rehabilita and Rittenhouse Suppleme	Saddleback Dam Mitigation, Maricopa and Pinal								valier				
5 Fredonia FRS Engineering S	itudy, Fredonia, AZ	10	Salem F	ork	Sites	11 a	nd 11	A Pha	ase I D	am R	ehabi	litatio	on
			Planning	g, r	esto	n and	Harr	ison (Lount	ies, V	/V		

26. NAMES OF KEY PERSONNEL (From Section E,	27. ROLE IN THIS CONTRACT (From Section E,		28. EXAMPLE PROJECTS LISTED IN SECTION F (Fill in "Example Projects Key" section below before completing table. Place "X" under projects key number fo participation in same or similar role.)									
Block 12)	Block 13)	1	2	3	4	5	6	7	8	9	10	
Kristin L. Civitella	NEPA		-				X		X		-	
Michelle A. Brummer, AICP	Public Involvement			_		10	7.					
Craig S. Shirk, AICP, ENV SP	Social Environment/Cultural Resources	1 3	_	Х				- 1	_	_	_	
Steven C. Smith, WPIT	Natural Resources/Wetland Delineation	X	Х			2 T	Х	,	Х	<u> </u>	—	
David H. Graff, PWS, CE, CWB Natural Resources/Wetland Delineation		X in	Х				Х		Х		X	
Corey W. Myers	Natural Resources/Wetland Delineation		3				Х					
Samantha R. Hockenberry Natural Resources/Wetland Delineation Jillian N. Arnold, CFM Natural Resources/Wetland Delineation		÷.	1				Х				<u> </u>	
				Х		Х	- 1	Х		-		
Matthew D. Houtz, GISP	Economics/GIS	Х	X		Х	Х			Х		X	
Christopher D. Krebs, PE, CFM, GISP	Economics/GIS	Х	X		х	X		Х	х		Х	
Vladimir Cecka, PE	Submittal Review	Х	Х			_	Х	X	Х	1		
Chad T. Hoover	Prepare Record/As-Built Drawings	X	Х		Х		Х	Х	Х		X	
Adam J. Moyer, PLS	Survey	Х	X					X	× X	3	X	
Brian S. Miller, PE, SIT	Survey	X	Х		8 (0	Х	Х	X		Х	
Aaron D. Achenbach, Assoc. DBIA, ENV SP Activities Control Activities		х	Х	l.	4		n		h		N	
Michael A. MacAllister, PE	Safety/Schedule	Х	Х	1		1	1	-			Х	
C. Michael Anslinger, MA, RPA	Social Environment/Cultural Resources			1			_	<u> </u>		1	1	
Elizabeth Heavrin	Social Environment/Cultural Resources							1		¥!		

10.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)	NO.	TITLE OF EXAMPLE PROJECT (FROM SECTION F)
1	Upper Deckers Creek Site 1 Dam Rehabilitation Planning and Construction, Preston County, WV	- 5	Lost River Watershed Dams, Site No. 16, Hardy County, WV
2	New Creek Site 14 Dam, Grant County, WV	7	Elkwater Fork Water Supply Dam, Randolph County, W
3	Supplemental Watershed Plan/EAs for Upper Brushy Creek Watershed FRS 7, 13A and 17, East Fork Above Lavon Watershed FRS 1A, 2B, 4 and 17, and Salt Creek and Laterals Watershed FRS 13, Collin, Grayson, Williamson, Wise, and Parker Counties, TX	8	Various Dam Safety and Water Resources Engineering Assignments, Chester County, PA
4	White Tanks FRS No. 4 Supplemental Watershed Plan/EA; McMicken Dam Rehabilitation; Powerline, Vineyard Road and Rittenhouse Supplemental Watershed Plan/EA; and Saddleback Dam Mitigation, Maricopa and Pinal Counties, AZ	Э	Renwick Dam Rehabilitation, Cavalier, ND
5	Fredonia FRS Engineering Study, Fredonia, AZ	10	Salem Fork Sites 11 and 11A Phase I Dam Rehabilitation Planning, Preston and Harrison Counties, WV

Sections H-





Section H Contents

IN	TRODUCTIONH-I-1
1.	PROJECT TEAM QUALIFICATIONS
2.	REFERENCES AND PERFORMANCE DATA
3.	APPROACH AND METHODOLOGY TO MEET GOALS AND OBJECTIVES
	Potomac-New Creek Site 1

Introduction

Gannett Fleming, Inc. is celebrating its 100-year anniversary in 2015. As a mid-sized, privately-owned engineering firm, Gannett Fleming cultivates an environment of innovation and knowledge sharing that results in delivering a high level of quality and client satisfaction. This has translated into more than 200 industry and client awards during the last three years alone and consistent excellent evaluations from our clients.

With nearly 2,000 employees located across more than 60 offices worldwide, Gannett Fleming is recognized in the top 10% of Design Firms each year by the *Engineering News-Record* and currently listed as #11 of the top 15 Dam and Reservoir engineering firms.

Gannett Fleming has a high degree of expertise in the design of earthen embankment dams with experience ranging from small, 8-foot-high earthen embankment dams (Lake Natalie Dam, PA) to those exceeding 770 feet in height (Oroville Dam, CA), including reconstruction design for the 180-foot-high Gilboa Dam. We are recognized experts in seepage analysis and seepage remediation design.

Our ability to successfully deliver engineering services is based on our people, our experience, and our knowledge of these watershed dam sites. Our integrated teams of planners, scientists, engineers, and managers work with our clients to create innovative and cost-effective infrastructure projects that are socially, environmentally, and financially sustainable. Our firm's completed projects include more than 100 new dams, modification of more than 250 existing dams, and safety evaluations of more than 500 dams.



Figure 1: Gilboa Dam Dedication. Gannett Fleming has experience providing successful engineering services for all dam types. We provided award-winning dam safety improvements and upgrades to the 180-foot-high concrete gravity and earthen embankment Gilbon Dam in New York.

1. Project Team Qualifications

Our Project Team includes qualified personnel in key disciplines, including geotechnical engineers, engineering geologists, hydraulic engineers, hydrologists, structural engineers, environmental scientists, economists, and construction inspection staff. They have extensive professional experience in dam engineering for NRCS dams, including planning, design, and construction oversight and will use this experience and expertise to provide quality and comprehensive services under this contract. Gannett Fleming has designated four team members as key personnel for this project. These four key personnel routinely work together on dam projects, including NRCS WV's Lost River Site 16 Dam, New Creek Site 14 Dam, and Upper Deckers Site 1 Dam.

The following paragraphs provide an overview of each person's qualifications and experience. The Organizational Chart in Section D presents our staffing plan; resumes located in Section E provide more detailed information regarding each team member's qualifications and experience.

Paul G. Schweiger, PE will serve as Project Manager. In that role, his primary purpose is to provide project leadership with the aim of improving project outcomes for WVCA. His background includes:

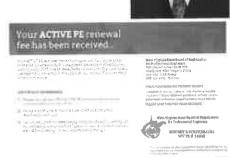
- 31 years of experience on more than 500 dams of various types and sizes
- 22 years of experience working on NRCS dam projects
- Registered Professional Engineer in West Virginia
- Lead Designer or Project Manager on the NRCS' Lost River Site 27, North Fork Hughes River, New Creek Site 14, Elkwater Fork, Lost River 16, and Upper Deckers Site 1 Dams
- Authored more than 50 technical papers and articles on dam engineering
- Instructor for application of SITES to evaluate earth cut spillway stability and integrity
- Member of USSD Committee for Dam Rehabilitation using RCC, ASDSO Technical/Training Program Committee, and NRCS RCC Work Group
- Served as Public Sector Representative on National Dam Safety Review Board
- Recipient of ASDSO's President's Award and the "National Award of Merit"



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Rodney E. Holderbaum, PE will serve as Project Principal and manage QA/QC. As Project Principal, Rod is responsible for overall contract oversight and client satisfaction. He will monitor the performance of the contract and ensure that optimum resources are available to WVCA at all times. His background includes:

- 41 years experience in the dam engineering profession
- Professional Engineer in West Virginia
- Proven track record on prior NRCS RCC and earthfill dam projects
- Project Principal for Elkwater Fork and Lost River 16 Dams and Civil Project Manager for North Fork Hughes River, Lost River 27, Lost River 4, and Lost River 10 Dams, all completed NRCS assignments
- Project Engineer, Manager, or Principal for 30 earthfill dam design projects
- Member of American Concrete Institute (ACI) Committee 207 Mass Concrete
- Member of the USACE RCC Research Steering Committee that guided new research to facilitate the use of RCC on USACE and other projects
- National Practice Leader for Dam Engineering
- Has provided engineering services on more than 200 dams and flood control projects of various types and sizes
- Specialized area of expertise in the design and construction of roller-compacted concrete (RCC) dams, including materials investigations and testing



Eric C. Neast, PE will serve as the Task Manager for the Planning Studies. He will lead the planning studies team to perform the environmental investigations, H&H analyses, and alternatives assessment to meet WVCA's goals and objectives. His background includes

- 25 years of experience
- Project Manager on more than 15 dam assignments
- Designed trash racks to reduce clogging at six Harmon Creek, WV, riser structures
- Project Engineer on the WV NRCS New Creek Site 14 Dam rehabilitation
- Specialized expertise in dam rehabilitation, dredging reservoirs, and sedimentation erosion control
- Successfully cultivates key relationships with regulatory, political, and local stakeholders, including local authorities, state agencies, and local community groups

Donald P. Roarabaugh, PE will serve as the Task Manager for construction oversight at Upper Deckers Creek Site 1. His background includes:

- Nearly 20 years of experience in water resources engineering with an emphasis on managing analyses, designs, construction-phase services, and monitoring for dam projects
- Senior Project Engineer or Project Engineer for NRCS dams, including New Creek Site 14, Lost River Site 16, Elkwater Fork, North Fork Hughes River, Upper Deckers Site 1, and Renwick Dams
- Responsible for RCC mix design and RCC design and construction quality control specifications for Elkwater Fork, New Creek Site 14, Upper Deckers Site 1, and Renwick Dams
- Specializes in start-up support for RCC dam projects, including 15 RCC construction projects in the last 10 years.



2. References and Performance Data

For the past 20 years, Gannett Fleming has worked almost continuously for the West Virginia NRCS designing new dams, rehabilitating existing dams, conducting dam assessments, preparing planning studies, providing construction support services and conducting dam safety training seminars. What makes this 20-year experience so relevant is that almost all of the engineers and scientists that provided the new dam design and construction services for the early West Virginia NRCS projects completed in the 1990s, such as the Lost River Site 27 Dam and the Hughes River Dam, have remained with Gannett Fleming and are available to work on this project. Paul Schweiger, the designated Project Manager for this assignment was the principal designer for the North Fork Hughes River Dam and Lost River Site 27 Dam, and later served as the Project Manager and designer for the Elkwater Fork Dam, Lost River Site 16 Dam, Salem Fork Dams, New Creek Site 14 Dam and Upper Deckers Site 1 Dam.

Figure 2 provides a timeline of selected West Virginia NRCS projects completed by Gannett Fleming for the past 20 years. Figure 2 does not include the NRCS projects Gannett Fleming has completed in Arizona, Hawaii, Indiana, Maine, Massachusetts, New Hampshire, New Jersey, New Mexico, North Dakota, Ohio, Pennsylvania, Texas, Vermont, Virginia, and Wisconsin, or the

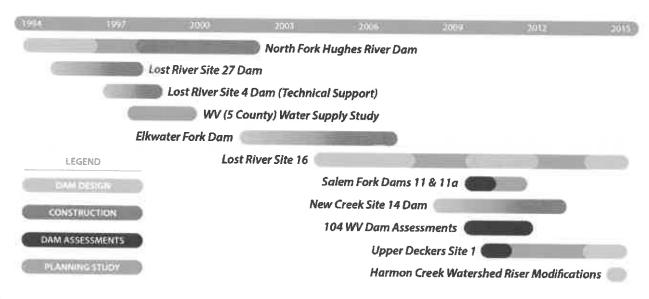


Figure 2. Timeline illustrating Gannett Fleming's near continuous experience completing West Virginia dam projects.

updating of some of the NRCS technical design manuals (Design of Reinforced Concrete Structures and Design of Riser Structures) for the NRCS Technical Center in Fort Worth.

As demonstrated in this SF 330, Gannett Fleming has an extensive history of involvement in design and construction projects. Each year we manage thousands of design and construction management tasks worldwide. Our firm has a solid track history of cost control for governmental and private client assignments, which is evident in many of our client ratings. Cost monitoring and control are critical components to Gannett Fleming's management plan. Standard cost accounting procedures provide our Contract Managers with real-time data to monitor project costs and keep the work within budget.

Our firm's successful past performance on projects is also confirmed by a variety of indicators, including:

- Maintenance of a continuously growing consulting engineering business for a century
- A level of repeat business for prior clients that constitutes more than 75% of the firm's ongoing business
- Active NRCS projects for the past 22 years
- The firm scoring above average in comprehensive performance on client questionnaires for more than 80% of its assignments
- Industry awards for completed assignments
- Past and current client references, including those listed within Section F
- Our ability to retain qualified and experienced personnel on staff, reflected by our low personnel turnover rate.

We encourage WVCA to contact any of the points of contact provided on the projects in Section F to inquire as to our quality of work, responsiveness, and adherence to budgets and schedules.

Gannett Fleming also conducts Client Satisfaction Evaluations (CSE) with clients to help provide feedback needed for continuous improvement. Our CSE form includes six individual measurement points (see Table 1), and one "overall performance" assessment. Clients evaluate our performance on a scale of 5 (highest) to 1 (lowest). In addition, clients are invited to add narrative comments to the CSE form. Over the past three years, nearly 600 clients gave Gannett Fleming an overall 4.7 out of 5 overall performance rating. CSE statistics through 2014 are shown in Table 1. A recent CSE we received from West Virginia NRCS for Lost River Site 16 is provided in Figure 3. Also included in Figure 3 is an Architect/Engineer Contract Administration Support System (ACASS) Rating for New Creek Site 14. The ACASS, which is now the Contractor Performance Assessment Reporting System (CPARS), is another key performance measurement. Additionally, we regularly receive letters of reference from our clients. We include an example reference letter from Andy Deichert, PE, with West Virginia NRCS on page 6.

Table 1: Client Satisfaction Evaluation Statistics for 2014. Gannett Fleming received perfect scores on 95 CSES in 2014.

Measurement Points	Average Rating
Technical Quality – Did we adhere to the scope? Was our work complete? Was our work accurate?	4.69
Timeliness – Did we adhere to the schedule? Were we prompt in dealing with other matters?	4.64
Cost Effectiveness – Did we adhere to the budget? Was the value received commensurate with the dollars spent?	4.65
Dependability/Reliability – Did we honor our commitments without reminders? Did we properly support your interests?	4.69
Cooperation – Did we display flexibility? Were we easy to approach? Were we actively helpful?	4.86
Communication – Were we good listeners? Did we ask appropriate questions? Did we provide information proactively?	4.69
Performance – Overall, how well did we serve you?	4.71

Figure 3: Recent Client Satisfaction Evaluation and ACASS Rating from West Virginia NRCS.

GF Project Number, 059142 Project Description: Garinett River Site 16 Watershed Dar	Fleming Environmental Team that conducted the fieldwark & consult and	cations for the Lost
SURVEY RESPONSES		
Element	Evaluation Factors	Ranking
Technical Quality	Did we adhere to the ecope? Was our work complete? Was our work accurate?	5
Timelness	Did we adhere to the schedule? Were we prompt in dealing with other matters?	5
Cost Effectiveriess	Did we adhere to the budget? Was the value received commensurate with the dollars speril?	5
Dependability/Reliability	Did we honor our commitments without reminders? Did we properly support your interests?	5
Cooperation	Did we display flexibility? Were we easy to approach? Were we actively helpful?	5
Communication	Were we good listeners? Did we ask appropriate questions? Did we provide information proactively?	
Performance	Overall, how well did we serve you?	8
Would you retain our services	s again? Yes	
Would you recommend us to	others? Yes	
May we use you as a reference	ce? Yes	
Would you like us to contact v	ou to further discuss our performance? No	

What could we do to serve you better? Excellent service.

Evaluator's Name, Parn Yost

Evaluator's email address pameta vost@ww.usda.gov

Year: 2014 Quarter: 4

18. QUALITY OF A-6 SERVICES BY DISCIPLINE			CALCO NUMBER						- Tab	
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Geolectrical Engineering	X								_	-
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Chartics: Engineering							_	_	_	_
Geningy	X						_	_	_	_
Chemistry		T	1			_	_	_		
Risk Assessment		. x	-	1			 			
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United States Department of Agriculture



Natural Resources Conservation Service 1550 Earl Core Road, Suite 200 Morgantown, WV 26505 (3C4) 284-7540 (Phone) (3C4) 284-4839 (Fax)

January 5, 2010

Letter of Reference for Gannett Fleming, Inc.

St. Johns River Water Management District 4049 Reid Street Palatka, Florida 32177

To whom it may concern,

Over the past 15 years, Gannett Fleming completed 16 projects for the West Virginia NRCS, including final design for four new dams, construction support for six dams, comprehensive water supply planning studies for three counties, safe yield investigations for several water supply projects, and other assignments. The total fees for the engineering services provided by Gannett Fleming for these projects exceed \$7 million.

In December 2009 we awarded a new 5-year indefinite delivery/indefinite quantity contract to Gannett Fleming for planning and design of new dams and rehabilitation of existing earthfill dams at various locations in West Virginia. Initial projects under this contract include final design for the rehabilitation of New Creek Dam Site 14 and planning for the rehabilitation of Salem Fork Dam Sites 11 and 11a and Upper Deckers Creek Site 1. Modifications to Upper Deckers Creek Site 1 will involve increasing the reservoir capacity for water supply.

Gannett Fleming was also recently awarded a 5-year indefinite delivery/indefinite quantity contract for engineering services for the assessment of dams, design, design review and construction management services for work with NRCS in the continental United States, including Alaska. For the first year under this contract, the West Virginia NRCS authorized Gannett Fleming to complete Dam Rehabilitation Assessment Reports for 25 earthfill dams at various locations within West Virginia.

We repeatedly have selected Gannett Fleming to provide engineering services for our projects because they are a recognized leader in the field of dam engineering, are responsive to our needs, have consistently delivered quality services, have the capacity to work on large projects in a deadline driven environment, and can adjust their schedules for execution of the work to meet our needs. Their past performance is demonstrated by their successful completion of many of our dam projects. We have consistently given Gannett Fleming a high level of approval of their work.

You are welcome to call me at 304-284-7563 if need more information regarding Gannett Fleming's performance.

Sincerely,

Andy Deichert, P.E. Civil Engineer

Helping People Help the Land

An Equal Opportunity Provider and Employer

3. Approach and Methodology to Meet Goals and Objectives

3.1. Brush Creek 9, Brush Creek Site 15, Potomac-New Creek-Whites Run Site 17, and Potomac-New Creek Site 1

Goal/Objective 1:

Develop planning level engineering hydrology and hydraulic data, develop rehabilitation alternatives, analyze impacts of alternatives, and develop narratives.

Goal/Objective 1 is absolutely critical to the success of each of the four planning projects. Based on our intimate knowledge and understanding gained during the dam assessments of these four structures, the most significant deficiencies identified at each dam are related to the hydraulic performance of the structures, including the conveyance capacity of the spillways, the activation frequency of the auxiliary spillway, the drawdown capacity of the principal spillway, and the stability and integrity of the auxiliary spillway. It is therefore necessary to accurately determine the hydrologic and hydraulic response of the watersheds and reservoirs for the 100-year flood, the Spillway Design Hydrograph (SDH) and the Freeboard Design Hydrograph (FBH).



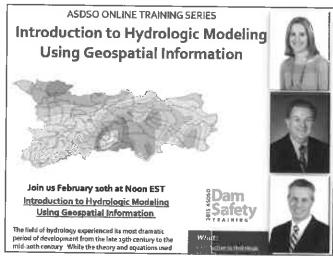


Figure 4: Training Opportunities. Gannett Fleming personnel regularly provide training to U.S. dam owners with topics including SITES and hydrologic modeling.

Gannett Fleming is nationally recognized for its hydrologic and hydraulic engineering expertise for dams and flood control projects as demonstrated by the technical seminars we regularly present and by the services we provide to the NRCS, USACE, FEMA, USFWS, the USBR and FERC. The computer models needed to perform the hydrologic and hydraulic analyses include SITES, HEC-HMS, HEC-RAS, and XPSWMM. Our engineers regularly teach national seminars and publish technical papers on the use of this software. Paul Schweiger, the designated Project Manager for this assignment, is an expert hydrologic and hydraulic engineering expert reviewer for USACE dam and flood control projects. Over the past five years, Gannett Fleming has completed hydrologic and hydraulics analyses for more than 300 dams, approximately half of which were performed for the NRCS.

When conducting hydraulic and hydrologic analyses, it is important to use accurate inputs such as the watershed curve number and terrain data. Gannett Fleming is a leader in analyzing and using the latest NRCS soils information to obtain watershed curve numbers and using LIDAR terrain data for hydraulic analyses. We will provide accurate hydrologic and hydraulic analyses for each dam in full compliance with NRCS



Figure 5: Lake Laura Dam. Our geologists and geotechnical engineers performed subsurface exploration and mapped the geologic prolling if the auditory spillway it take Laura Dam to develop the engalishing parameters mention to available the stability and integrity of the auditory spillway.

requirements. Our geologists and geotechnical engineers will use state-of-the-art geophysical and subsurface exploration procedures, such as seismic refraction, digital photogrammetry, geophysical investigations, rock coring, and test pitting, to develop the geologic profiles and erodibility parameters needed by our hydraulic engineers to evaluate the stability and

integrity of the auxiliary spillways.

Developing dam rehabilitation alternatives requires creativity, a thorough understanding of available options, and expertise with innovative construction techniques. Having designed over 200 new dam and rehabilitation projects at locations throughout the United States, Gannett Fleming has expertise with all of the latest construction techniques including roller-compacted concrete (RCC), articulating concrete block revetments (ACBs), soil cement, deep soil mixing, advanced grouting techniques, sheet pile cutoffs, Hydroplus fuse gates, labyrinth spillways, etc. For most of these construction techniques, Gannett Fleming has pioneered applications that have been adopted industry-wide. This is demonstrated by the many engineering design manuals we have written for the NRCS, USACE, PCA, and others on using these methods for dam rehabilitation.

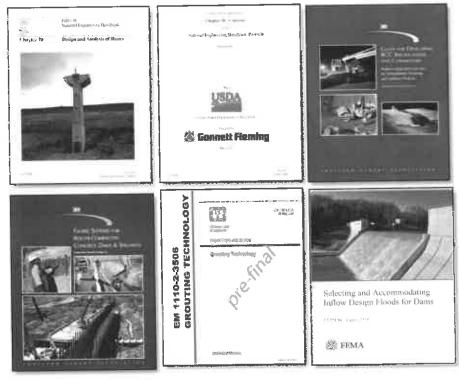


Figure 6: Sample Dam Engineering Design Manuals. We have written engineering design manuals for the NRCS, USACE, PCA on new and innovative dam rehabilitation methods.

Designing dam rehabilitation options for

NRCS dams also requires a thorough understanding of NRCS policies and design standards. Gannett Fleming is in regular communication with NRCS technical leaders and researchers including the Agricultural Research Service (ARS), and provided technical reviews for NRCS dam designs under the open-end national contract we have with the NRCS for the last ten years. For example, we recently provided technical review for the rehabilitation of Renwick Dam, a \$7.6 million RCC dam overtopping

rehabilitation design prepared by the North Dakota NRCS. We also provided construction inspection and engineering support services for this project. All of our West Virginia new dam and dam rehabilitation projects (6 projects totaling more than \$100 million in construction costs) have been reviewed and approved by both the West Virginia NRCS state office in Morgantown and the NRCS Technical Center in Fort Worth, Texas, demonstrating our understanding of the regulatory process and our ability to help our client achieve compliance.

Analyzing the impacts of alternatives and developing narratives requires environmental scientists with a thorough understanding of current regulatory and resource agency standards and requirements including those unique to West Virginia. Our environmental scientists and economists have completed the necessary investigations and assisted the WV NRCS prepare permit applications for dam rehabilitation and new dam projects. For example, in early 2015 we completed the environmental analyses and coordination with regulatory and resource agencies on behalf of the WV NRCS for the construction of Lost River Site 16, a new 90-foot-high flood control and water supply dam. We provided similar assistance, including developing environmental mitigation measures for the rehabilitation of New Creek Site 14 Dam.



Figure 7: New Creek Site 14 Dam, WV. Through our expertence of the laborate environmental materialism measures in W. Common to the laborate our environmental equations have a thorough understooding or West Anglians, content regulatory and resource (QEOR) stanglands and regulatory

In summary, our approach and methodology to achieve this goal is to:

- Assign each task to the most qualified team member
- Use the most current NRCS approved computer models and analysis methodologies
- Evaluate the full range of dam rehabilitation options available to address deficiencies at each site
- Assess the costs, benefits and impacts of each alternative to establish the preferred alternative
- Prepare the narratives required in accordance with NRCS procedures.

Goal/Objective 2: Develop planning level biological data, analyze impacts of alternatives and develop narratives.

Gannett Fleming's environmental professionals have a working knowledge of the natural resources and regulatory processes in West Virginia. Our baseline biological data is used to develop project narratives and is incorporated into project planning documents, preliminary impact calculations, and alternatives analyses. In 2014, our team was selected by NRCS to lead wetland identification and delineation efforts on the Lost River Site 16 Watershed Dam project in Hardy County and also on the Edwards Run Mitigation Site in Hampshire County. Our efforts included stream assessments of Lower Cove Run and Edwards Run. The team completed the field efforts within the project schedule and deadlines. NRCS evaluated our work as excellent and the United States Army Corps of Engineers reviewed our boundaries in the field and accepted our reports, data, and mapping. We understand the environmental role in each of these projects, and will develop the narratives and specific baseline data to support project planning and alternatives analyses.

For each site, our environmental scientists will conduct planning level research on the existing biological data either known to the specific site or known to the region to establish baseline conditions of natural resources. Planning level biological data will review and incorporate existing information from various sources including: USGS topographic quadrangle sheets; aerial photography; county land use maps; federal and county wetland maps, FEMA maps, county soil survey data; and a general search of other previous studies and surveys.

We will also conduct an initial project inquiry with the U.S. Fish & Wildlife Service and West Virginia Natural Heritage Program to determine if any protected species, such as the northern long-eared bat and Indiana bat, or habitats are known to occur within the project study area or surrounding region. If protected species are listed by the respective agencies, we will include them in the biological baseline data of the site along with their known habitat requirements and conservation measures.



Figure 8: WV Stream Evaluation Biological Findings. During a stream assessment of Lower Cove Run, Gannett Fleming captured and identified fish species such as the mottled scuplin.

Following our investigation, we will prepare a detailed narrative of each site alternative to present the purpose and need of the alternative, its intended benefits, the proposed actions required to implement the alternative, and a description of the final alternative once implemented. We will analyze the environmental impacts of each alternative and compare them with other alternatives to aid in an alternative selection. A comparison of alternatives to analyze impacts may include the following:

- Acreage of earth disturbance required
- Acreage of tree clearing required
- Acreage of habitat disturbance required
- Potential impacts to downstream and upstream natural resources
- Linear feet and acreage impacts to waterways
- Linear feet and acreage impacts to wetlands
- Potential impacts to protected species or species of special concern
- Potential impacts to aquatic ecosystems
- Potential impacts to terrestrial ecosystems
- Permitting requirements
- Seasonal restrictions and conservation measures required
- Potential mitigation requirements

The results of this effort will be incorporated into the overall evaluation of alternatives.

Goal/Objective 3: Develop planning level economic data, analyze impacts of alternatives and develop narratives.

Gannett Fleming has a proficient understanding of economic analyses for dam rehabilitation projects. Our project economist has conducted benefit-cost analyses on 14 other NRCS dams to evaluate rehabilitation alternatives within the Watershed Plan/NEPA process. We have expertise in quantifying a wide variety of benefit categories in both rural and urban settings, including avoided flood damages to agriculture, infrastructure and diverse structure types (e.g., homes, schools, businesses, power plants, airports), as well as quantifying the benefits that dams may provide for recreation facilities and activities, water supply, storm water detention, and aesthetic/amenity values to water-adjacent properties. We are accustomed to working closely with NRCS to identify the National Economic Development alternative, and to allocate and document project benefits and costs according to NRCS guidance.

In accordance with the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G), the Natural Resource Economics Handbook Part 611 – Water Resources and the December 2009 National Watershed Program Manual, we will prepare benefit-cost analyses for the four dams.

Gannett Fleming will use the USACE's HEC-FIA (Flood Impact Analysis) software (version 2.2) to quantify the expected structural damages from flooding under the rehabilitation alternatives retained for detailed study, as well as a future without project alternative, developed to provide a baseline for establishing project benefits. We will estimate the cost of physical damage to residential and commercial buildings, agriculture and structures, and institutional and recreational facilities. Gannett Fleming's experience measuring economic effects of flood damages using HEC-FIA modeling includes eight USACE dam failure and consequence studies.

HEC-FIA data input will include the results of hydraulic modeling, including flood depth, arrival time and duration grids, in conjunction with GIS-based tax assessment, aerial photography and land use data. We will estimate the value of large institutional structures not captured in the tax assessment data on a square foot basis using Marshall valuation commercial cost database. Our firm has consistently used Marshall Valuation Service data on dam rehabilitation studies to accurately capture the full value of structure damages.

We will model flood damages to structures for the 100-year and multiple smaller storm events. Elevations will be based on a bare earth terrain developed from the collected Digital Elevation Model (DEM) data, with a standard height added to approximate finished floor elevation for structures. The analysis will use the model's structure inventory and damage functions to calculate potential economic loss, supplemented with additional NRCS or USACE damage factors as needed.

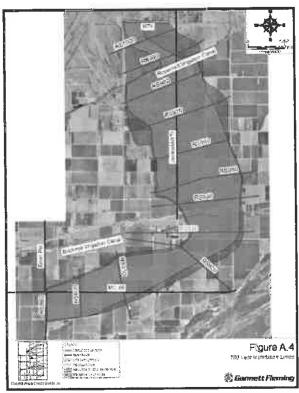


Figure 9: White Tanks No. 4 100-Year Inundation Limits. We used inundation limits under the 100-year storm event to determine potential flood damages.

Using GIS-based spreadsheet analysis, Gannett Fleming will calculate other benefit categories consisting of:

- Damages to transportation and utility infrastructure
- Administrative cost savings to the National Flood Insurance Program (NFIP) from a reduction in the number of properties that must participate under each alternative
- Recreation activity and water supply benefits provided by the dams, where applicable

We will calculate net economic benefits and a benefit-cost ratio for each alternative using the federal water project discount rate, and determine the National Economic Development (NED) alternative in coordination with WVCA and NRCS. For each dam, Gannett Fleming will document the benefit-cost analysis in an Economic Analysis Technical Memorandum that will include study area inventory, methodology, results and discussion. After NRCS and WVCA approval, Gannett Fleming will incorporate a summary of the analysis, as well as the economics-related Watershed Plan tables required by NRCS and formatted according to NRCS guidelines, into the Watershed Plan/NEPA document.

Goal/Objective 4:

Develop all other planning level data as required to comply with NRCS water resources planning requirements set forth in the NRCS Title 390, National Watershed Program Manual (NWPM), Part 505 (attached) which is incorporated by reference.

Gannett Fleming has extensive experience in addressing the wide range of resource issues associated with dam rehabilitation projects and similar major federal actions. Our firm offers a committed and knowledgeable interdisciplinary staff of NEPA compliance personnel with significant experience and skills in natural, social, economic and cultural resource assessments and studies.

Our public involvement specialist has worked with multiple municipalities in West Virginia on stakeholder involvement events for projects, such as summits, focus groups, and interviews, as well as traditional public meetings. Early and continuous efforts during project planning processes garnered support for plan refinement, adoption and subsequent implementation.

In addition to the engineering and hydraulic data (Goal/Objective 1), biological data (Goal/Objective 2), and economic data (Goal/Objective 3), Gannett Fleming will characterize other social, cultural, and environmental considerations and identify potential project impacts. These other resource evaluations involve a wide range of potential concerns as noted at 501.24.B of

the NWPM and Part 410.9.C of NRCS GM-190, Subpart A, Section 410.9.C in order to comply with the National Environmental Policy Act and associated federal and state environmental laws and regulations.

Scoping is a public process designed for the early identification of substantive environmental issues and concerns associated with the proposed project. Section 505.35 Development of Rehabilitation Project Plans (NWPM Part 505.35) requires that the planning of dam rehabilitation projects must follow the procedures at Part 501, including addressing each of the applicable scoping concern subjects (Part 501.24.B):

- National Economic Development (NED)
- Air quality
- Coral reefs
- Cultural resources
- Ecologically critical areas
- Endangered and threatened species
- Environmental justice and civil rights
- Essential fish habitat
- Fish and wildlife resources
- Floodplain management
- Forest resources
- Invasive species
- Land use
- Migratory birds
- Natural areas
- Parklands
- Prime and unique farmland, and farmland of statewide significance
- Public health and safety
- Regional water resource plans (including coastal zone plans
- Riparian areas
- Scenic beauty

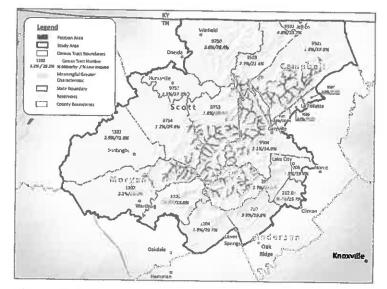


Figure 10: Socioeconomic and Environmental Justice Analysis. Gannett Fleming performs detailed socioeconomic and environmental analyses for our clients. This is a sample analysis prepared for the U.S. Office of Surface Mining and the U.S. Environmental Protection Agency covering a 67,000 acre area in northeastern Tennessee.

- Scientific resources
- Sole source aquifers
- Social issues
- Soil resources
- Water quality
- Water resources
- Waters of the United States, including special aquatic sites
- Wetlands
- Wild and scenic rivers
- Other concerns identified by SLO, agencies, and the public

Scoping provides the initial opportunity for building confidence and trust between project proponents and project stakeholders. Stakeholders involved in the NEPA process may include state and local government agencies, non-governmental organizations or groups, and affected citizens. Scoping will consist of:

- Identifying public and agency concerns.
- Clearly defining environmental issues.
- Identifying range of alternatives to be examined.
- identifying related issues that originate from separate legislation, regulation or Executive order.
- Identifying State, Tribal government, and local agency requirements that must be addressed.

Gannett Fleming will assist WVCA to conduct scoping early in the NEPA process to ensure that important issues are identified and studied, as well as determine what issues may be insignificant. This understanding at an early stage allows the project team to focus on the important issues, avoiding the need to complete an exhaustive analysis of relatively less-critical environmental concerns.

While we anticipate that not all of the scoping subjects identified in Part 501.24.B are applicable to the projects associated with this EOI, pertinent issues (beyond engineering, biological and economic concerns) could include cultural resources, environmental justice, land use, farmlands, parklands and recreation use, public health and safety, water resource planning, scenic resources, and other community social issues.

The development of planning data for these subjects would involve a combination of field views and detailed studies, supported by readily available demographic and economic data from sources including the U.S. Census, the U.S. Bureau of Labor Statistics, the West Virginia Department of Commerce, the West Virginia Region 1 Planning & Development Council (including Mercer County), the West Virginia Region 8 Planning & Development Council (including Mineral County) the Mineral County Planning Commission and the West Virginia Division of Culture and History.

Goal/Objective 5: Ensure all tasks are completed to the satisfactory review and approval, when required, from NRCS and any other involved federal government agencies.

As demonstrated in 2. References and Performance Data in the preceding pages, the team assigned to this project has successfully completed many new dam and dam rehabilitation designs to the satisfaction of all agencies involved in the approval process, including the WV NRCS, the NRCS Technical Center in Texas, the West Virginia DEP, the USACE, the County Conservation District and others. The best proof of Gannett Fleming's performance in this regard is to contact the WV NRCS as our reference for numerous NRCS dam projects.

Our approach and methodology to achieve this goal is to closely follow NRCS procedures for all tasks and to **regularly coordinate decisions, analyses and deliverables with the WVCA and NRCS as the work progresses**. This approach will include a kickoff meeting, regular progress meetings, and workshops as needed to obtain input and concurrence on our study approach, findings and recommendations.

Goal/Objective 6:

Coordinate all aspects of planning process with Sponsors and stakeholders by incorporating their feedback into the selected rehabilitation option. Conduct and manage public processes associated with planning including; but not limited to, scoping meetings, public meetings, sponsor meetings, and agency coordination meetings.

Gannett Fleming views the WVCA and NRCS as partners and welcomes your involvement in the study, especially in the selection of the rehabilitation option for each dam. Many rehabilitation options have different advantages and disadvantages and require owner input. Some of the differences between rehabilitation options impact the operation and maintenance of the facility, aesthetics of the site, public and worker safety around the site, and long-term performance of the structure. These are all factors that require feedback from the WVCA, the NRCS, other agencies, and the public.

Concrete dam proposed for lake at Bear Creek Village

By Tom Venesky

A feesbility study on reconstructing the Bear Creek Bear found that the heat soluties would be to replace entirely the timber reinforced structure with a concrete mass-based days.

A fund drive, aponeered by the Bear Creek Association, raised 9554,000 in pledges. Bear Creek Village Councilman Tien Falle explained that the pledge tatal would have risen to \$537,250 with the addition of a Regressor Historic Preservation Greek. The goal for the project was \$650.000.

Paul Schweiger, a dam engineer with Gamet Fleming, said the ultimate solution is to preserve the historic significance and appeal of a timber orth dam and beautify the downstream area.

He continued that countracting a new thinbur crib dam would be did float because such a structure is deemed a "high beaurd dam; which has a countramble darries of To preserve the easthetics of the timber crit dam, which is important is the historic energandry, Schweiger said the surface of the concrete dam world be convered with weeden planks to reproduce the lock of the original dam. He added that meaterinks from the oil wild be reused to beautify and possibly and possibly and possibly a surface of the control of the contr

"We're keeping the original style but just using different casts rists," he said. The life cycle of the concrete in 180 years. It has a short construction time and it

He added the new dam woul not affect the reservair level as the concrete would span from he abutments right down to the helicark

"We'd like to make it look like it did in the early 200e. We're awalting authorization from the esseciation," he added.

A representative from the Peansylvania Elistoric Messon Con-



Monthers of Bear Creek Association Nation to construction of many

mission explained that the grant was originally approved last blarch when officials wanted to repair the dam. But when the proposal changed to canstructing a new concrete dam with a weeded surface, it didn't neet the reducind Kewsteen Green mide.

"The goldalines may we can't And complete reconstruction or new commercials," and the regressitative. That we do weart you to linew the proposal does a lot for the latestrical district, and consummity because it hashy the lates, we thank the proposal does a lot for the latestrical district, and consummity because it hashy the lates, we thank the proposal does not be the latestrical district. The latest latestrict and the latestrict and the latestrict and the latestrict and latestri

Puber praised the community for the average-balling landger support. He said there were to descend out of 130 families in the village. "The campaign weel over the top an Christman Eve, which I think was appropriate because it was relevance," he said.

Figure 11: Stakeholder Outreach. Paul Schweiger conducted a stakeholder meeting for the Bear Creek Dam rehabilitation project that involved coordination with more than 100 property owners around the lake.

To achieve this goal, we will work closely with the WVCA and NRCS to identify all stakeholders and their primary interests in the project. Stakeholders could include adjacent property owners, resource agencies, community leaders, and local, state, and federal government. Working with WVCA and NRCS, we will develop a master plan for coordinating and managing the public process. The master plan for each facility needs to effectively address critical issues that are of importance to all project stakeholders. The ultimate success of each project will be determined by developing a compelling Master Plan that addresses all of the deficiencies at each facility while meeting WVCA's overall strategic plan for the facilities. This will require a thorough understanding of all of the issues, input from all stakeholders, creativity with a vision, and an effective outreach and communication program.



Figure 12: Urban Encroachment. Some dam projects, like New Creek Site 1 where significant urban encroachment has occurred, may require considerable stakeholder outreach and coordination.

We will tailor the stakeholder outreach program for each dam to the level of interest and public participation needed as recommended by the WVCA and NRCS. For example, at New Creek Site 1, significant urban encroachment has occurred onto the dam site and any rehabilitation alternative will involve considerable coordination and feedback from the adjacent property owners and surrounding community.

Once the stakeholder assessment steps are complete, we will implement a series of well-planned Stakeholder Engagement activities, such as community open houses or workshops. These activities will help educate stakeholders about the project, timeline, and plans for the future. The objective of these activities will be to ease tensions, allay concerns, and build confidence in the project and project team.

The purpose of a stakeholder outreach project is to improve understanding and participation of targeted individuals, groups, and communities. This can be achieved by reducing barriers to information for the target audience; informing them of the benefits to participating; and focusing on the needs and wants of target audiences. The outreach program can include the following stakeholder engagement activities:

- Community open houses
- Monthly meetings
- Visioning Workshop
- Facilitator-led workshop to gain community insight and "buy-in" to future improvements
- Dedicated website
- Toll-free hotline
- Social media
- Community progress reports (newsletters)
- Online stakeholder tracking



Figure 13: Stakeholder Meetings. Outreach for fishing wharf at Conowingo Dam included facilitating meetings with stakeholders at local diners and other favorite public meeting places.

Goal/Objective 7:

Assign a project manager to maintain schedules, budgets, press releases, public notifications, administrative tasks, and other duties necessary to complete the planning process. The project manager shall serve as the point of contact for the AE.

The successful completion of any project is largely dependent upon the skills and expertise of our team. A Project Manager must be technically strong and also able to facilitate work activities while proactively communicating and resolving project challenges. Our Project Manager, Paul Schweiger, brings a skill set of deep technical qualifications with demonstrated management capability. Paul's technical background is in dam safety engineering, and he has more than 30 years of experience performing project investigations, dam assessments, designs, design reviews, reports, construction drawings, and specifications, as well as providing construction contract administration services, hydrologic and hydraulic (H&H) studies, dam rehabilitation, and new hydraulic structures. In compliment to Paul's

"Paul Schweiger is ... a remarkable engineer with a philosophy that their work is not complete until the Service is satisfied. The quality of their work and the depth of their commitment to exceptional performance are as if they are employed by the U.S. Fish and Wildlife Service and share our responsibilities and goals."

ACASS evaluation comment by Christopher Bell, USFWS

understanding of the technical requirements, he has served as Project manager on more than 100 projects during his career and knows how to manage the execution of projects to ensure adherence to scope, schedule, budget and quality. His combination of technical expertise and progressive management philosophy makes him ideally suited to lead this team.

Paul has published more than 50 technical papers and design manuals on a wide range of dam engineering subjects, including papers on dam removal. Paul has received national awards in Engineering Excellence from the American Consulting Engineers Council, the ASDSO, and the Association of Conservation Engineers for several new dam and dam rehabilitation projects. He serves as a frequent lecturer on dam engineering, including conducting Dam Owner Workshops and Emergency Planning Workshops at locations throughout the U.S. on behalf of the ASDSO and the U.S. Fish and Wildlife Service. He is an approved FERC facilitator for performing failure-modes analysis exercises for dams.



As the main point-of-contact, Paul will regularly communicate with WVCA to discuss project status and progress, and to vet issues. He is committed to working with WVCA as an extension of its staff, and will always be available by cell phone, if not in person, for the duration of the project. Paul will proactively communicate any project challenges, risks, and solutions to WVCA to keep the project on track. He will also maintain project oversight, adhere to the quality assurance/quality control (QA/QC) program, prepare project invoicing/progress reporting, and address all items raised by WVCA. He will identify and address any issues, risks, or areas of potential concern that may arise before they can impact schedule, budget, or the quality of the product. He will apply his recent, relevant experience to streamline the execution of this project while maintaining schedules, budgets, press releases, public notifications, and administrative tasks to complete the planning process. He will provide progress reports, invoices, and updated salary rate schedules; and identify potential out of scope work and offsetting credits for reduced scope.

Goal/Objective 8:

Adhere to the following timelines as referenced in the Project Agreements.

To adhere to WVCA's schedule, our Project Manager, Paul Schweiger, will assign the work to the best-qualified but most cost-effective team members. He will regularly monitor the schedules of all open tasks, and provide monthly updates to WVCA.

Gannett Fleming uses many tools to track project schedules, and selects appropriate tools to match project complexity. Typical scheduling tools include:

- Gantt and PERT charts,
- Microsoft Project, and
- Primavera Project Planner and Expedition.

Our team will select appropriate scheduling tools and develop an appropriate method and schedule. Actual progress versus established milestone deadlines will indicate performance. During regular meetings, the project team will identify and discuss schedule variances and then make appropriate adjustments to keep the project on schedule.



Figure 14: New Creek Site 14 Dam, WV. Gannett Fleming performed planning, analysis, design construction drawings, and specifications, permitting, and construction management on a fast-track schedule for this NRCS WV dam.

Table 2: Adhering to WVCA's Schedule. Our team will select appropriate scheduling tools and develop an appropriate method and schedule to meet WVCA's deadlines.

Project	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

Gannett Fleming commits a willingness to meet project budgets and schedules and to WVCA project requirements. With a staff of nearly 2,000 employees, we have the resources to draw upon to provide the necessary staffing with persons with the required expertise and with the appropriate salary levels.

With more than 500 professional level staff members qualified and available to WVCA, the Gannett Fleming team has the ability to apply approximately 777,000 man-hours per year to complete our assignments no matter what the schedule. The current utilization rate for these professionals based on known workload is 65 percent. Therefore, we have over 200,000 staff hours currently available for new projects. This level of versatility and availability means the Gannett Fleming team can meet the demands of this project and complete the required scope of work on time and within budget. If the Project Manager determines that the current staff assigned to the project will not complete the objectives within WVCA's timeframes, additional resources will be pulled from other offices without impacts to the work order budget.

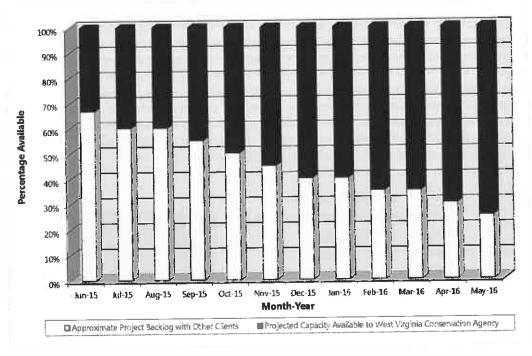


Figure 15: Proposed Team's Availability. The current utilization rate for our project team based on known workload is currently 65 percent, decreasing over the next 12 months.

Goal/Objective 9:

Develop planning documents addressing the 25 scoping concerns in the National Watershed Program Manual (NWPM), Part 505 and additional concerns of sponsors and the public. Evaluate direct and cumulative impacts of alternatives with conclusions and narratives.

Gannett Fleming offers NEPA compliance personnel with significant experience and skills in natural, social economic and cultural resource assessments and studies. Gannett Fleming prepared the Watershed Plan/EA for the \$15 million dollar rehabilitation of White Tanks FRS #4 in Maricopa County, AZ, and has provided NEPA and engineering support for approximately 13 other NRCS dam rehabilitation projects over the past decade. Our firm has held multiple consecutive nationwide NEPA contracts with the U.S. Environmental Protection Agency, Office of Federal Activities and currently holds a Blanket Purchase Agreement Contract for NEPA Services with the U.S. General Services Administration.

Our partner, Cultural Resource Analysts, Inc. (CRA) previously provided Section 106 cultural resource compliance services for the NRCS at Brush Creek Dam Site 14 and other dam projects within West Virginia for the USACE, Huntington District involving National Register evaluations, archaeological surveys, and historic property management plans.

NEPA compliance for each dam project would follow the procedures of NRCS General Manual Title 190, Ecological Services, Part 410 (Compliance with NEPA) and Part 610 (National Environmental Compliance Handbook), along with relevant sections of the National Watershed Program Manual.

On behalf of WVCA and NRCS, Gannett Fleming will complete an initial Environmental Evaluation (EE) using the NRCS worksheet (Form NRCS-CPA-52) for each dam rehabilitation project. Completion of an EE will provide an initial analysis of potential environmental effects and a framework for NEPA and regulatory compliance. We will complete sections A through P and coordinate the review and the determination of the EE finding with the responsible NRCS official and WVCA.



Figure 16: Brush Creek Dam Site 14. The direct Area of Potential Effect for this project consisted of approximately 3.4 ha (8.3 acres) for possible use to rehabilitate the previously constructed PL83-566 flood control dam, including areas to be used for borrow;

Based on the initial analysis of potential effects, Gannett Fleming will determine the type of NEPA compliance document required in coordination with NRCS and WVCA.

Gannett Fleming will develop NEPA compliance documentation in compliance with the general format identified in the NWPM Part 501.31 and include the following major evaluation components:

- Purpose and Need for Action Summarizes why the proposed action (e.g. dam rehabilitation) is needed and the goals to be achieved by project implementation.
- Scope of the EA Documents the general range of project alternatives and associated actions, the area potentially affected by the project, and the significant issues of concern identified through the scoping process that require detailed analysis.
- Affected Environment Characterizes the current physical, biological, ecological, economic and social environment within the project watershed and other areas of potential impact and covers the full range of resource considerations identified through the scoping process which are relevant to the proposed action.
- Alternatives Identifies preliminary alternatives considered and eliminated from consideration and the alternatives studied in detail through the NEPA process, including a Future Without Project Alternative and the National Economic Development Alternative.
- Environmental Consequences Provides details concerning resource impacts associated with each alternative studied, the determination of significance of those impacts, and a comparison of direct and cumulative impacts among the alternatives considered. Gannett Fleming would follow the guidance of USDA Technical Note 610.126 "Considering the Cumulative Effects of NRCS Activities" to assess cumulative effects for each project.
- Consultation, Coordination and Public Participation Summarizes comments and input obtained from governmental agencies and other public organizations and individuals and provides information on how those comments or information were considered in the project analysis and/or identification of a Preferred Alternative.
- Identification of the Preferred Alternative Encapsulates the results of the detailed analyses, agency and public consultation, benefit cost analyses, and NRCS decision making process and rationale for the identification of the preferred course of action for addressing the project purpose. This section also provides details concerning any mitigation measures and authorizations/permits required to address resource impacts of the proposed action.

Goal/Objective 10:

Complete a wetland delineation, using the current US Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region. Secure a Jurisdictional or Preliminary Jurisdictional wetlands determination from the US Corps of Engineers as determined by the SCC.

Professional Wetland Scientists certified by the Society of Wetland Scientists will lead the Gannett Fleming wetland delineation group. In 2014, the team investigated more than 250 acres of natural areas in West Virginia to identify and delineate wetlands and waterways. Our team's report, mapping and field presentation of delineated boundaries were reviewed and approved by the USACE during a field verification to support a jurisdictional determination. The regulatory agencies are familiar with our field personnel and reports.

The purpose of a wetland delineation is to identify the limits of waterways and wetlands. We will identify and delineate palustrine wetland boundaries in the field with uniquely labeled survey flagging using methods described in the Regional Supplement to the Corps of **Engineers Wetland Delineation Manual: Eastern** Mountains and Piedmont Region (Version 2.0), U.S. Army Corps of Engineers, April 2012. Our field approach to identify and delineate waters including wetlands is in accordance with the standards and expectations of the regulatory agencies. Wetlands will be classified according to the Cowardin Classification System (1977).



Figure 17: Lost River Site 16, WV. In 2014, the 184m investigated more than 250 acres of natural areas in West Virginia to identify and delineate wetlands and waterways. Our team's report, mapping and field presentation of delineated boundaries were reviewed and approved by the USACE during a field verification to support a jurisdictional determination.

We will complete wetland field data forms to document wetland or non-wetland data points. If wetlands are present in and directly adjacent to the study area, they will be included in the delineation so that their presence could be shown on project mapping for future planning and permitting.

We will characterize soils by evaluating the upper horizons of the soil profile. Using a "sharpshooter" spade with a 14-inch blade, we will dig soil pits, evaluate soil layers for depth, texture, saturation, and describe the layers using standard soil nomenclature. The Munsell Soil Color Charts (Macbeth Division of Kollmorgen Instruments Corporation, 1994) will determine the colors of horizons and redoximorphic features, if present. In the field, we will determine soil observations of reducing conditions using presence/absence determinations of redoximorphic concretions and oxidized rhizospheres, and identifying low chroma matrices.

Our botanists will identify plant communities and record dominants and presence within the data plot area. Plant species will be assigned to their respective stratum and assigned to their respective indicator status [e.g., Upland (UPL), Facultative Upland (FACU), Facultative (FAC), Facultative Wetland (FACW), or Obligate Wetland (OBL) based on the 2014 USACE National Wetland Plant List (Lichvar and Kartesz, 2014) or updated version if available at the time of the fieldwork.

Wetland function and value assessments will be performed at each wetland location using the methods outlined in The Highway Methodology Workbook Supplement, Wetland Functions and Values A Descriptive Approach, USACE New England District (NEDEP-360-1-30a 1995).

In preparation for our field studies, our project team will acquire and review existing preliminary data. Base mapping will include topographical maps, LIDAR, National Wetland Inventory maps, National Cooperative Soil Survey (NCSS) soil surveys, technical publications, aerial photographs, and other existing information. This preliminary step to fieldwork allows for an efficient and accurate field effort.

We will identify waterways through a review of available mapping and field investigations. Topographic and engineering maps will indicate the presence of streams within the project study area. We will perform our field investigations for waterways in conjunction with the wetland field investigation, which include the field verification of mapped watercourses and the identification and delineation of streams, springs, and seeps not previously mapped. We will identify waterways by the presence of bed and banks and/or ordinary high water marks. The flow regime of each identified waterway will be characterized based upon field indicators of hydrologic, floral, and faunal characteristics at the time of the investigation. Perennial streams typically exhibit flow and support a benthic macroinvertebrate community comprised of two or more taxa. Intermittent

waterways typically exhibit flow during precipitation events, but support a benthic macroinvertebrate community comprised of less than two taxa. Ephemeral waterways typically exhibit flow in direct response to precipitation in the watershed and no benthic macroinvertebrate communities are expected to be present. All identified waterways will be photographed. Linear, man-made channels (ditches) that were constructed in uplands to divert storm water flow or provide some other historically agricultural purpose will be considered to be non-jurisdictional features.

Using GPS technology with sub-meter accuracy, we will map wetland and waterway features. Data points will be exported into a GIS or CADD file to present features on existing project drawings and plans. We will investigate data point locations for primary and secondary wetland hydrology indicators. If present, wetland boundaries will be marked using biodegradable pink wetland flagging. Wetland boundary data points will be located using a Trimble™ GeoXH 6000 Global Positioning System (GPS). The GeoXH 6000 is capable of attaining submeter accuracy. The GPS data will then be transferred onto relevant site mapping using a known coordinate system. Acreage calculations will



Figure 18: Wetland Delineation and Surveying, WV. Using GPS technology with sub-meter accuracy, we will map wetland and waterway features. If present, wetland boundaries will be marked using piodegradate and wetland lagger to

be to the nearest 0.01 acre for each delineated habitat. If a site includes more than one Cowardin type, they will be individually calculated and presented in a table and associated map. Tables will be generated for each site to summarize the Cowardin type, acreages associated with each classification, the Corps' jurisdictional status, and if invasive species are present or other species of significance were observed during fieldwork.

The results of the wetlands and waterways field work will be presented in a report to be prepared for each site area. The Wetland Identification and Delineation Report will include a description of the project study area, background information, investigation methods used, wetland datasheets, photo logs, site mapping, tabularized coordinates of mapped features, and function and value sheets. The report and mapping will be used as a basis for agency coordination, jurisdictional determination and to also support future planning and permitting efforts.

After review by the State Conservation Committee (SCC), the Wetlands and Waterways Identification and Delineation Report will be submitted to the respective U.S. Army Corps of Engineers District, to request a field visit to review the delineation boundaries in order to obtain a Preliminary Jurisdictional Determination. A request for a Preliminary Jurisdictional Determination will acknowledge that the SCC does not dispute federal jurisdiction by presenting isolated features. If isolated wetland features are delineated, the SCC may request that these features be acknowledged as isolated, then the USACE will require the project team to go through the Approved Jurisdictional Determination process to establish isolation. These issues will be handled on a case by case basis.

Wetland flagging will be placed in the field within a day or two of the field visit by the USACE for purposes of a Jurisdictional Determination. Any changes to the field boundaries will be re-located using a GPS unit with sub-meter accuracy. After the Corps reviews and approves the Final Wetlands and Waterways Identification and Delineation Report it will serve as a baseline reference for impact determinations.

Goal/Objective 11: Complete a WV Stream and Wetland Valuation Metric (SWVM) for the selected alternative. Develop a mitigation plan based on the results of the USCOE wetland determination and the SWVM, if necessary, for the selected alternative.

The West Virginia SWVM incorporates the findings of the Wetlands and Waterways Identification and Delineation Report and also requires additional data to be collected to assess water quality and ecological value for waterways. The SWVM is a tool used to determine compensatory mitigation for impacts to regulated features. We used this at Lost River Site 16 and are familiar with using SWVM for the purposes of calculating compensatory mitigation requirements and were one of the first consultants to use SWVM for its intended application.

Certified Ecologists recognized by the Ecological Society of America will lead the Gannett Fleming aquatic assessment group. In 2014, the team investigated over 8,000 linear feet of natural streams in West Virginia to gather baseline data to calculate SWVM. We conducted stream evaluations at each site under a Scientific Collecting Permit for the purpose of macroinvertebrate sample collection. Each scientist participating in the stream evaluation efforts obtained a West Virginia Fishing License. The West Virginia Department of Environmental Protection (WVDEP) approved our team's report, mapping, field methods and data evaluations. The regulatory agencies are familiar with our field personnel and qualifications.

We will evaluate and survey perennial streams for benthic macroinvertebrates in accordance with the Rapid Bioassessment Protocols (RBP) for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates, and Fish (2nd Edition) (Barbour et al, 1999). The team will select sampling reaches from downstream and upstream locations as well as throughout the Site



Figure 19: Stream Investigation. In 2014, the purp investigated over 8,000 linear feet of natural streams in West Virginia to gather baseline data to calculate SWVM.

area to establish background and baseline conditions. We will identify, evaluate, and survey a sample reach consisting of a 100-meter (approximately 330-feet) length of stream for its physical, chemical and biological characteristics. Our team will complete the Rapid Bioassessment Physical Characterization/Water Quality and Habitat Assessment Field Data Sheets for low or high

gradient streams while at sampling reach locations (Barbour et al, 1999). We will obtain water quality measurements using a YSI 556 water meter or equivalent.

Gannett Fleming will collect macroinvertebrates using a D-frame dip net and the kick-netting method for D-frame dip nets as described in the RBP for Single and Multi-Habitat Approaches for macro-invertebrate collection. WV DEP Watershed Assessment Branch 2014 Standard Operating Procedures for macroinvertebrate collection recommends 11 kicks per sampling reach; however, to ensure sufficient macroinvertebrate samples, we will collect 20 kicks in each stream (WVDEP, 2014). For each sampling reach, our team will composite the collections from all 20 kicks into one sample and stored in 95% denatured ethanol. We will complete the Rapid Bioassessment Benthic Macroinvertebrate Field Data Sheet in the field following completion of macroinvertebrate collection (Barbour et al, 1999). For quality control, our team will collect a duplicate macroinvertebrate sample at a randomly selected sampling reach to represent 10% of the total sampling effort for the respective site.

To avoid the potential for transporting organisms from one watershed to another, field equipment will be thoroughly cleaned with a solution of 95% denatured ethanol to kill and dislodge remnant organisms from previous use. Waders will be cleaned and dried prior to fieldwork, and all waders used will have rubber soles and felt or padded soles will be prohibited. Between sampling reaches the D-frame net and sieve will be rinsed with 95% denatured ethanol to kill and dislodge remaining organisms. Boot soles will be brush scrubbed and inspected for trapped organisms to reduced cross-contamination between sampling reaches.

The full sample for each reach will be picked in its entirety for all macroinvertebrates. Picking efforts will be quality control reviewed by repicking/searching half of each sample's total volume for missed individuals. If the efficiency rate of the picking effort was greater than 90%, then the sample will have passed quality control review for picking.

For each reach sample, macroinvertebrates will be sorted to family and identified to the lowest practical taxonomic level, which will be genus for most specimens. A reference collection will be assembled exhibiting all taxa identified and representing 5% of the total sampling effort collection will be for quality control identification review. A digital photographic reference collection, depicting each taxa and taxon identifiable features, will be assembled and appended to the Stream Evaluation Report.

Macroinvertebrates will be identified and reviewed using a Wolfe DigiVu SZM 3.0 Stereomicroscope with up to 40x magnification. Dichotomous keys will be used for macroinvertebrate identification.



Figure 20: Macroinvertebrate under Microscope. Macroinvertebrates will be identified and reviewed using a Wolfe DigiVu SZM 3.0 Stereomicroscope with up to 40x magnification.

The picking and identification efforts will be conducted by our environmental scientist with a Society of Freshwater Science Taxonomic Certification to Family Level for Aquatic Insects and academic training in the field of aquatic entomology and taxonomy. Quality control review will be conducted by our team's senior aquatic biologist/insect taxonomist with 27 years of experience in the field of aquatic wildlife biology and entomology.

The summary of macroinvertebrate sample composition will be identified to the lowest practical taxonomic level and summarized in a table in the report. The surface water quality data will be summarized in a table in the report. West Virginia Stream Condition Index (WVSCI) metrics, macroinvertebrate sample to family level with WV tolerances values will be summarized in table in the report. The digital photographic reference collection for macroinvertebrates will append the report.

The Stream Evaluation Report will document and describe each sampling reach and watercourse within the study area. Stream evaluation data will be summarized for each sampling reach and watercourse. The RBP Habitat Assessment Score is the sum total of the ten criteria for which each sampling reach and watercourse will be evaluated in the field based on the RBP protocols. Rapid Bioassessment Field and Lab Data Forms will be presented in the report with the RBP score for each reach evaluated.

The West Virginia Stream Condition Index (WVSCI) is comprised of six metric values calculated from macroinvertebrate samples. The six metric values are standardized using the best standard values for each metric, provided by the WV Department of Environmental Protection (DEP) and Division of Natural Resources' Scientific Collection Database, to metrics score out of 100.

The WVSCI Total Score is the average of the six metric scores. Virginia Stream Condition Index Calculation Sheets will be provided in the Stream Evaluation Report.

SWVM incorporates the findings of the Wetlands and Waterways Identification and Delineation Report and Stream Evaluation Report and serves as a tool for determining compensatory mitigation requirements for impacts to wetlands and waterways. If mitigation is required at a Site, the federal and state agencies will refer to the SWVM calculations to establish mitigation goals for the proposed impacts.

Temporary and permanent impacts to wetlands and waterways under the jurisdiction of the U.S. Army Corps of Engineers and WVDEP will require federal and state authorization of these impacts under Section 404 of the Clean Water Act and Section 401 Water Quality Certification. A mitigation plan will serve to document the required compensation proposed to mitigate for the proposed impacts in accordance with the 2008 Mitigation Rule, 33 CFR Part 332 of the Federal Register.

Mitigation plans, if needed will consider banks, the in lieu fee program, and onsite/offsite mitigation options. If mitigation banks are established they can be presented as a primary mitigation option. If banks are not established, the West Virginia In Lieu Fee program is a preferred option with a goal of no net loss of existing stream and wetland acreage and functions in West Virginia through effective restoration, enhancement, replacement, and preservation of aquatic resources. The program utilizes watershed and landscape based planning to identify and assess potential mitigation opportunities that maximize the ecological benefits of aquatic resources within the same geographic service areas as the impacts. By consolidating the mitigation requirements stemming from multiple impacts, large scale watershed efforts can be focused within priority watersheds. The In Lieu Fee program works closely with other state and federal agencies, non-government organizations, academic institutions, watershed associations, individuals and others to develop plans and set priorities.

The In Lieu Fee program was initiated by the Department of Environmental Protection to provide an additional tool for achieving compensatory mitigation for unavoidable impacts to waters of the United States and state waters, including wetlands,

streams and associated buffers. Permits required for such impacts by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act, under Section 10 of the Rivers and Harbors Act, and by the State of West Virginia under Section 401 of the Clean Water Act. The permit allows permittees to participate in the state's In Lieu Fee program if there are no Mitigation Banks available to provide compensatory mitigation. Permittees participate by paying a fee to the program which is determined by inputting qualitative and quantitative data from proposed impacts to streams and wetlands into the SWVM.

If an onsite/offsite mitigation plan would be feasible for a Site, then the objectives of that plan will follow the U.S. Army Corps of Engineers Multi-Agency Compensatory Mitigation Plan Checklist for Aquatic Resource Impacts under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The key features of the mitigation plan for onsite/offsite mitigation would include:

- Mitigation Goals and Objectives
- Describe functions lost at impact site
- Describe functions to be gained at mitigation site
- Describe overall watershed improvements to be gained
- Baseline Information for Impact and Proposed Mitigation Sites
- Provide data on physical attributes of sites (soils, vegetation, hydrology)
- Describe historic and existing land uses and resources impacted
- Describe reference site attributes if available
- Mitigation Site Selection and Justification
- Describe process of selecting proposed site
- Likelihood of success, future land use compatibility, etc.
- Mitigation Work Plan
- Location





Figure 21: West Virginia Wetland Soil Evaluation. Our mitigation plans for onsite/offsite mitigation include a description of the soils, vegetation, and hydrology parameter changes.

- Construction Plan
- Describe planned hydrology, vegetation, soils, buffers, etc.
- Performance Standards
- Identify success criteria
- Compare functions lost and gained at impact and mitigation sites
- Describe soils, vegetation and hydrology parameter changes
- Site Protection and Maintenance
- List parties and responsibilities
- Provide evidence of legal protective measures
- Maintenance plan and schedule
- Monitoring Plan
- Provide monitoring schedule, identify party (ies) and responsibilities
- Specify data to be collected, including assessment tools and methodologies
- Adaptive Management Plan
- Identify party (ies) and responsibilities
- Remedial measures (financial assurances, management plan, etc.)
- Financial Assurances
- Identify party (ies) responsible for assurances
- Specify type of assurance, contents and schedule

3.2. Upper Deckers Creek Site 1

Gannett Fleming is currently performing preliminary design (up to 60% design documents) of the Upper Deckers Creek Site 1 dam rehabilitation and is proceeding to final design in the fall of 2015. The NRCS Recommended Plan for Upper Deckers Creek Site 1 consists of rehabilitating the dam and adding rural water supply as a new purpose. This action will modify Upper Deckers Creek Site 1 to provide the level of flood protection commensurate with its hazard class, secure a rural water supply for Public Service District 1, and eliminate the liability of operating a dam in non-compliance with current design criteria.

Because of the uncertainties and complications associated with obtaining permits for the original NRCS' Recommend Plan, the alternative to rehabilitate the dam by armoring the embankment with roller-compacted concrete (RCC) was reconsidered and discussed. Although this option was estimated to have a slightly higher construction cost, it was determined to have significantly less environmental and other impacts, and thus less difficult to implement. A decision was subsequently made to select this option for the Recommended Plan.

In developing this Plan of Work for final design, Gannett Fleming performed an in-house value-engineering of the RCC embankment armoring alternative with the goal of addressing the concerns expressed with the original Recommended Plan and reducing project costs. This effort resulted in a modified RCC embankment overtopping design that eliminated the conventional reinforced concrete spillway training walls. This was accomplished by armoring the entire downstream slope of the embankment and constructing converging sloped RCC training walls using RCC. The most recent research developed by the USDA Agricultural Research Service (ARS) laboratory under the direction of Dr. Sherry Hunt is being used to determine the required horizontal extent of the RCC armoring ("Model Study of RCC Stepped Spillways with Sloped Converging Training Walls" [2008]).

The proposed RCC embankment armoring alternative also provides best use of onsite materials and eliminates the need for borrow material (fill and topsoil) to modify the embankment and significantly reduces the amount of excavated material that needs to be spoiled. Fill material for modifying the embankment will be obtained from the existing embankment excavation for the RCC armoring, thus eliminating the need for offsite borrow material. Excess material excavated to modify the dam will be spoiled within the existing auxiliary spillway and at the toe of the embankment. The approach will be to spoil all excess excavated material onsite.

The proposed Plan of Work developed for this project was revised to include the following features:

- Replacing the existing riser and outlet structures with a new riser and outlet structure. The new outlet structure will consist
 of a plunge pool. The normal pool will be raised approximately 11.54 feet to elevation 1736.0 to provide water supply and
 an allowance for conservation releases.
- Removing the existing embankment drainage system and constructing a new internal embankment filter and drainage system under the RCC armoring and around the principal spillway conduit.

- Constructing a new stepped RCC auxiliary spillway over the embankment and backfilling the existing earth-cut auxiliary spillway. The assumed embankment armoring concept is shown in Figure 1. The need for the stilling basin features will be determined during Phase II of the design Supporting Documentation, Development of Design Data. Both unformed and formed RCC step configurations will be considered in the preliminary design phase, along with recommendations for final design. It is assumed that both options may be included in the final design to allow final section based on bid price.
- Flattening the upstream and downstream embankment slopes will be flattened to 4H:1V and 3H:1V, respectively, to make best use of available materials, increase stability of the embankment slopes, and facilitate maintenance of the structure.
- The approximately 17,000 cubic yards of surplus material from the excavation of the embankment will be used to construct a berm at the toe of the dam.



Figure 22: Upper Deckers Creek Site 1 Dam Rehabilitation. In this artist rendering of proposed modifications to Upper Decker's Site I. RCC armoring is shown without vegetated soil cover to illustrate the extent of RCC armoring.

Goal/Objective 1: Oversee quality control inspections and tests performed by the contractor.

The project as described in the aforementioned section will require construction-phase quality control inspections and tests for mixing and placement of RCC, placement of filter drain material, embankment fill, conventional reinforced concrete, and other materials. Gannett Fleming has provided construction quality control inspection and testing services to the NRCS on prior watershed projects including training in the latest RCC quality control procedures and on-call field assistance or office quality control reviews during construction. In addition, we have assumed full responsibility for all resident and office construction-phase quality control services for prior NRCS' dam rehabilitation projects. Gannett Fleming has had multiple concurrent dam construction projects ongoing across the United States for the past 20 years and has full-time construction support staff dedicated to dam construction projects that are trained and qualified to provide all quality control inspections and tests for dam construction projects. Overall, Gannett Fleming has provided construction management services on over 100 dam projects.

The quality of a construction project depends heavily on the performance of the inspection staff. We understand that this means providing well-trained and experienced field personnel who receive the proper support from management and who work in an atmosphere dedicated to partnering. In order to meet the quality objectives of our clients, we maintain an experienced staff of construction professionals; many of our professionals have attained NICET certifications, and many others are licensed Professional Engineers. Our typical on-site inspection services include:

- Administering project meetings
- Analyzing and updating construction schedules
- RCC mix designs, RCC plant calibration, RCC test sections and RCC production testing
- Concrete air, slump, and compressive strength testing
- Documentation of construction activities
- Field office administration
- Inspecting for compliance with environmental requirements
- Material verification testing (including field laboratories)
- Monitoring compliance with contract drawings and specifications
- Monitoring traffic control plans
- Project records management
- Quantity calculations for contractor payments.



Figure 23: Elkwater Fork Dam. Gannett Fleming oversaw quality control testing of RCC at NRCS WV's Elkwater Fork Dam.

In summary, our approach and methodology to achieve this goal is to staff the construction phase of this project with the most qualified construction support professional and follow established NRCS construction quality control procedures. We will staff the project with a Chief Inspector experienced with Watershed Dams and NRCS construction documentation and inspection procedures, and field personnel who are knowledgeable with the type of work being performed at any given time; including fill placement, concrete placement drainfill placement, and RCC placement; and who understand the quality control tests including the procedures to perform the tests and the reason for performing the tests.

Goal/Objective 2: Prepare records (as-built) drawings.

We will prepare as-built drawings in accordance with NRCS National Engineering Manual part 511.11(b). The as-built drawings recently prepared for the NRCS by Gannett Fleming for the rehabilitation of New Creek Site 14 provide an example of the quality of our work and ability to complete this task to the full satisfaction of the NRCS. Gannett Fleming's approach and methodology to achieve this goal is to following the same procedures we used to complete the as-built drawings for New Creek Site 14 as well as other NRCS dam projects. In general, we complete the as-built drawings as the project progresses, incorporating shop drawings, field measurements, and surveys, so the asbuilt records are complete when the construction is complete. We will also prepare as-built specifications as the project progresses, in accordance with NRCS policies, to incorporate any approved revisions or changes.

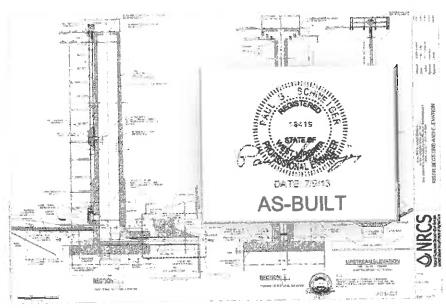


Figure 24: New Creek Site 14 Sample As-built Drawings. Paul Schweiger, a WV Professional Engineer and our proposed Project Manager, stamped the as-built drawings for NRCS WV's New Creek Site 14 Dam project.

Goal/Objective 3: Review construction contractor's submittals and coordinate submittal review responses.

Gannett Fleming employs an array of software tools to provide effective management of construction projects including submittals and reviews. These tools include web-based document management systems such as ProjectMates (by Systemates, Inc.). When appropriate, we will use these web-based construction management tools as the Project Controls System Software (PCSS) to enhance communication and data sharing for all of the various elements included within the "umbrella" of this assignment. The use of ProjectMates was adopted for our two most recent NRCS dam rehabilitation construction projects (New Creek Site 14, WV in 2011 and 2012, and Renwick Dam, ND in 2013 and 2014). This web-based software allows the contractor to upload submittals directly the secure web site which creates a record of the transmittal and provides immediate notification of the submittal to the WVCA, NRCS, designer and onsite construction support staff. Submittal reviews and responses are similarly uploaded to the site by the reviewers with immediate notifications to the Contractor, WVCA, NRCS and onsite construction support staff. This software and procedure provides dated records and easy tracking of submittals and responses, convenient access to all submittal documents and reviews, and creates a powerful database that is provided to the WVCA as a final project deliverable for future reference.

Goal/Objective 4: Review and verify contractor survey notes for compliance with contract documents.

Gannett Fleming has professional surveyor's that regularly complete construction-phase surveys and other surveys including high-precision monument surveys, reservoir bathymetric surveys and fill quantity surveys. Our surveyors installed the survey controls at Upper Decker's Site 1 and completed the bathymetric survey and topographic surveys required for this project, and are therefore very familiar with this site. Gannett Fleming's approach and methodology to achieve this goal is to use the same procedures we used to verify the contractor's survey notes for compliance with the contract documents for the construction of the modifications to New Creek Site 14. This will include review of the Contractor's surveys by our surveyors and CADD technicians to verify the project is being built in accordance with the contract documents and within the allowable tolerances in the project specifications.

Goal/Objective 5: Document daily construction activities.

Having provided onsite construction support and resident engineering services to the NRCS for numerous construction projects, Gannett Fleming is very familiar with the NRCS documentation requirements. Our approach and methodology to achieve this

goal is to use the same procedures we used to document construction activities for New Creek Site 14 dam rehabilitation project. In addition to maintaining the daily field books, including the job diary books, calculations books, fill inspector books, concrete inspector books, drainfill inspector books, and RCC inspector books, we will also scan and upload the daily entries into ProjectMates so that they can be accessed by the WVCA, NRCS and the engineer as needed. Note that access to data uploaded to ProjectMates will be managed securely and access privileges to this information will only be granted to those who are authorized to have access. The field books will contain records of work performed each day, equipment used and on standby, Contractor personnel onsite and hours worked, and key communications with Contractor personnel in accordance with NRCS procedures and policies. We will also maintain all other NRCS required documentation in the field office including logs of visitors, wage rate interviews, NPDES inspections, etc. An example daily entry from the Chief Inspector's job diary as proposed for documenting daily construction activities and to be uploaded to ProjectMates is shown on Figure 25.

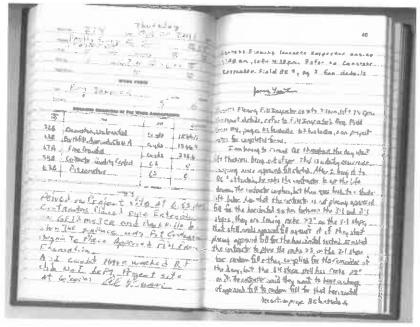


Figure 25: New Creek Site 14 NRCS Job Diary. Our Chief Inspector updates the job diary daily with to document daily construction activities to be uploaded to ProjectMates.

Goal/Objective 6: Monitor pollution control measures for compliance with the NPDES permit, state, and local regulations.

Gannett Fleming will inspect and monitor all pollution control facilities installed by the Contractor for compliance with the approved NPDES Permit, Erosion and Sedimentation Pollution Control Plans and Specification, and applicable federal, state, and local laws. Inspections will include inspection of the initial feature installation, daily patrols, and during/following all storm events. Records will be maintained in the project diary. A record of formal inspections of the NPDES facilities will also be maintained on the wail of the field office if requested by West Virginia DEP as was required for the New Creek Site 14 Rehabilitation Project.

Goal/Objective 7: Monitor the safety plan and construction schedule.

Gannett Fleming will monitor the safety plan for compliance with applicable OSHA, WVCA, and NRCS requirements including routine checks that Contractor's personnel are wearing appropriate personal protective equipment (PPE) and work is being performed in accordance with applicable safety laws. Communications with regard to safety violations will be



Figure 26: New Creek Site 14 Pollution Control Measures. We inspected erosion control measures for the access road along the crest of dam for the multi-year construction project at New Creek Site 14.

recorded in the job diary and escalated to a higher level if unsafe actions are not corrected.

Gannett Fleming will monitor the construction schedule for conformance with the project Performance Time plan. The schedule will be evaluated, at a minimum, during biweekly onsite progress meetings with the Contractor. Gannett Fleming will apply our extensive construction experience to evaluate any schedule slippage and Contractor proposed recovery plans, and will advise the WVCA and CO accordingly.

Goal/Objective 8: Process the pay estimates, as required by the Contracting Officer assisting, as requested, with payroll-related contract requirements.

Gannett Fleming's Chief Inspector will record the work performed each day in the job diary and will review each monthly progress payment request from the Contractor. We will make every effort to resolve any discrepancies with the Contractor at the field level through regular communication and thorough record keeping. We will perform wage rate interviews in accordance with NRCS procedures and maintain records of the interviews on the appropriate forms and note the interviews in the job diary.

Goal/Objective 9: Provide independent construction cost estimates for contract modifications and changes.

Gannett Fleming will provide independent construction cost estimates for contract modifications and changes as requested by the WVCA or NRCS. Cost estimates for Contract Mods will be performed by our experienced office support staff in conjunction with our resident inspector, field inspectors, the WVCA, and the NRCS. We will have prepared the Engineer's construction cost estimate for the project and thus will be well suited to evaluate the cost of any changes that may arise during construction.

Gannett Fleming has extensive experience with in-house value engineering, and evaluating contractor-proposed value engineering and/or modifications that arise from unforeseen conditions encountered with rehabilitation projects as the work progresses and deviations from original construction records are uncovered. Our experienced field staff will be the first line of verification that a changed condition has been found.

Goal/Objective 10: Ensure all tasks are completed to the satisfactory review and approval, when required, from involved federal agencies.

Gannett Fleming's experienced field staff will be continuously verifying that the work is performed in accordance with the Contract Documents. We have worked with the WVCA, WV NRCS, WV DEP, and Pittsburg District of the USACE on prior

Watershed Dam construction projects, including the New Creek Site 14 Dam Rehabilitation project, and have the intimate knowledge of Watershed Dams and ancillary facilities necessary to detect deviations from the Contract Documents. Goal/Objective 11: perform Quality Assurance Plan (QAP) items as identified in the QAP; including but not limited to, surveying, material testing, observation, etc.

Gannett Fleming will provide field staff knowledgeable in Watershed Dams and all aspects of the types of work that will be performed to rehabilitate Upper Decker's Creek Site 1. Our extensive experience with Watershed Dams facilitates knowledgeable observation of the Contractor's work. Our Chief Inspector will have a minimum of 10 years construction experience and will have experience with dam construction. Our supporting field staff will have experience with the types of work and the QA testing that meets or exceeds the requirements set forth in the Quality Assurance Plan. In addition, our field personnel will be in regular communication with our office support staff to understand the requirements of all elements of the project and the design intent of each feature.

We will use our in-house surveyors to check construction control including layout and elevations at key junctures in the project. We will use either in-house surveyors or an approved local subcontracted surveying firm to spot-check the contractor's surveys and to survey for final conformance with the contract documents and final pay quantities.

We will have experienced fill/excavation inspectors on site during times of key excavations, and during placement of fill/drainfill. Our fill inspector will have prior experience on fill placements for dams; be familiar with earth, rock, and drain fill placing operations; be knowledgeable in NRCS documentation procedures; be licensed to operate a nuclear density gauge, and understand the project plans and specifications. In addition, we have the capability to perform gradations and proctor curves at our in-house geotechnical laboratory, or we may use an approved local subcontracted testing firm. Fill placement



Figure 27: New Creek Site 14 Fine and Coarse Drain Fill Placement. Our experienced fill/excavation inspectors were on site during placement of fill/drainfill at New Creek Site 14.

inspectors will maintain a Field Book for fill placement and coordinate daily entries into the job diary with the Chief Inspector.

For inspection of conventional concrete placements, we will have an experienced concrete inspector onsite to check forms, reinforcing steel and other embedded items, observe the placements, and perform tests in accordance with the Quality Assurance Plan. Our concrete inspector will have ACI concrete field testing technician, Grade I certification or higher. Concrete placement inspectors will maintain a Field Book for concrete placement and will coordinate daily entries into the job diary with the Chief Inspector.

For inspection of roller-compacted concrete (RCC) placements, we will have an experienced RCC inspector onsite to observe placements and perform tests in accordance with the Quality Assurance Plan. Our RCC inspectors will have prior experience on other RCC construction projects and will be under the supervision of office support staff with more than 10 years of RCC construction experience. During critical times of RCC placement, such as the trial placement and start-up of production placement, we will have RCC staff onsite with more than 10 years of RCC construction experience. RCC placement inspectors will maintain a Field Book for RCC placement and will coordinate daily entries into the job diary with the Chief Inspector.

in summary, quality assurance testing, observations, and surveys will be performed and documented in accordance with the Quality Assurance Plan and NRCS procedures. The project will be staffed with a Chief Inspector experienced with dam construction and with over 10 years of construction experience. Supporting field staff for fill, concrete, and RCC placement will be experienced in their respective lines of responsibilities and will perform their work under the leadership of the Chief Inspector and guidance of supporting office staff who fully understand the design intent and requirements. The office support staff will review QA testing and coordinate any concerns with the WVCA and NRCS as appropriate.

31.9fGNATURE 1. AUTHORIZED REPRESENTAT The foregoing is a statement of far	
Can of America	32. DATE 6/2/2015
33. NAME AND TITLE	0/2/2013
Paul G. Schweiger PF Vice President	

SF 330 Part II





	ARCHITECT-	ENGINEER	QUALIFIC	CATIONS			1 SOLICITATION N	JMBER (if any)	
	***		PART II -	- GENER	AL QU	ALIFIC	ATIONS		
29 FIRM	(If a firm	has branci	n offices, co	omplete fo	or each	specifi	ic branch offic	e seeking work.)	
						u co i Abri	SHED 4. DUNS	NUMBER	
Gannett Fleming Camp Hill, PA						1915	60-91	5-3887	
20. STRE	enate Avenue							5. OWNERSHIP	
2c. CITY	mate Avenue	2d. ST	ATE 2e. ZIF		a. TYPI	e oration			
Camp	Hill	РΔ	1701		Corp	Oracion			
6a. POIN	OF CONTACT NAME AND TIT	E			b. SMA	LL BUSINE	SS STATUS		
Paul G	. Schweiger, PE, CFM, PHONE NUMBER				N/A				
	763-7211	6c. EMAIL ADD	RESS r@gfnet.co	-	7. NAM	E OF FIRM	(If block 2a is a branc	h office)	
		FIRM NAME(S) (if a	any)	(7)	Gann	ett Hen	ning, Inc. TABLISHED		
		N/A			 		/A		NUMBER /A
9. EMP	LOYEES BY DISCIPLINE					_	<u>- </u>	FIRM'S EXPERIENCE	AND
			c. No. of Empl		<u> </u>	ANN	UAL AVERAGE	REVENUE FOR LAST	5 YEARS
a. Function			C. IVO. Ur Empi		a. Profile				c. Revenue Index
Code	b. Discipline		(1) FIRM	(2) BRANCH	Code		h Exp	erience	Number
06	Architect		42	9	A01	Bridg		, incline	(see below)
08	CADD Technician		88	32	A04	Const	ruction Manag	rement	4
12	Civil Engineer		118	20	A05		Estimating, Eng		1
15	Construction Inspec		160	21	A08	Dams	(Concrete; Ar	ch)	4
16	Construction Manag		79	20	A10		(Earth/Rock);		7
18	Cost Engineer/Estim	ator	5	4	A11	Ecolo	gical/Archeol.	nvestigations	1
20	Economist		18	8	B01		y Conservation		1
21	Electrical Engineer		99	25	B02		A, Environmen		4
23	Environmental Engir		31	3	C04			ource Mapping	1
24	Environmental Scier		52	19	C06		onmental Plant		1
27	Foundation/Geotech	nnical Engr.	54	23	C08		onmental Reme		1
29	GIS Specialist		43	17	C10		ies; Fish Ladde		2
30	Geologist		41	11	C12		rvices		5
32	Hydraulic Engineer		35	16	C18	Hydra	ulics & Pneum	atics	2
36	Industrial Hygienist		2	2	D02		Surveying		1
38	Land Surveyor		7	1	E01		cape Architect	ıre	1
39	Landscape Architect		2	1	E03			(/Area/Statewide)	6
42	Mechanical Engineer		28	15	E04		ng (Site/Install		2
47	Planner: Urban/Reg	ional	38	14	E07		Safety Facilitie		1
52	Sanitary Engineer	_	23	8	E09		(Bldgs; Struct;		3
57	Structural Engineer		130	40	E10		nalysis	,	1
59	Engineering Technici		107	31	E11	Rivers	/Canals/Water	ways/Flood Ctrl	2
60	Transportation Engin		190	32	FO2	Seismi	c Designs & St	ıdies	1
62	Water Resources Eng	ineer	50	21	G01			ping/Floodplain	2
	Hydrogeologists		6	2	G02	Sustair	nable Design	0,	2
	Other Employees		485	395	G04			gy; Grndwater	6
Total	AULAL AVERAGE		1986	685	G06	Water	Supply/Treatn	nent/Distb.	6
II. ANI	NUAL AVERAGE PROFE RVICES REVENUES OF	SSIONAL		PRC	FESSIO	NAL SE	RVICES REVEN	UE INDEX NUMBER	
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b. Non-Fede		0	3. \$250,000 4. \$500,000	to less than	\$500,0	00	8. \$10	million to less than \$2	5 million
c. Total Wo		0	5. \$1 million	to less than	า \$2 milli	on on	9. \$25 10. \$50	million to less than \$5 million or greater	0 million
			12. AUT	HORIZED I	REPRES	ENTATI	VE	or greater	
a. SIGNATO	RE O		The for	egoing is a	stateme	nt of fact	s		
/_) [] []	//						6/2/2015	
1	and de l	Lean.						6/2/2015	
C. NAME AN		A	-						
raul G. S	chweiger, PE, CFM Vio	e Presid én t							

Forms





ARCHITECT-ENGINEER QUALIFICATIONS

i SOLICITATION NUMBER (if any)

PART II	- GENERAL	QUALIFICATIONS
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2a EIDM	(If a firm has branch or BRANCH OFFICE) Name	offices,	comple	ete for each	specifi	c branch office s	seeking work.)			
N 8 - 4		3. YEAR 4. DUNS NUMBER ESTABLISHED 06-987-9666								
	annettFleming Valle		1957							
2b. STREET						5. OWNERSHIP a. TYPE				
Valley Forge Corporate Center, 1010 Adams Avenue 2c. CITY 2d. STATE 2e. ZIP						ration				
Audubo		PA	19403	3-2402	Corpc	nation				
	OF CONTACT NAME AND TITLE				b. SMAL	L BUSINESS STATUS				
Esther	M. McGinnis. Senior Vice Preside				N/A					
	00. 2.07 (12	^{ADDRESS} nis@gfn:	ot com		7. NAME	OF FIRM (If block 2a is a	branch office)			
(020) 0.	8a. FORMER FIRM NAME(S	ins@gin	er.com	<u> </u>		ett Fleming Affilia	tes, Inc. 8c. DUNS NUM	nep.		
	N/A					N/A	N/A	DEN		
9. EMPL	OYEES BY DISCIPLINE	.			Δ1	10. PROFILE OF	FIRM'S EXPERIENCE A	AND		
a.		C.	No. of Emp	loyees	1	THORE AVEITAGE !	TEVENUE FOR LAST S	c. Revenue		
Function	h Pinninga				a. Profile			Index Number		
Code 02	b. Discipline Administrative		FIRM	(2) BRANCH 13	Code BO2		xperience	(see below)		
08	CADD Technician	- -	88		_	Bridges		6		
12	Civil Engineer	-	118	6	C15	Construction M		1		
14	Computer Programmer		L17		D01	Dams (Concrete		11		
15	Construction Inspector		160	3	D02		ock); Dikes; Levees	3		
16	Construction Manager		79	1	E03	Electrical Studie		2		
20	Economist	_	18	2	E09		mental Statements	3		
21	Electrical Engineer		99		E11	Environmental		1		
23	Environmental Engineer		31	14	H07	Highways/Stree	ts/Parking Lots	7		
24	Environmental Scientist	_	52	4	L02	Land Surveying		1		
			JZ 	4	P04	gas)	country, liquid and	1		
27	Foundation/Geotechnical Engineer		54	8	P07	Plumbing & Pipi	ing Design	1		
30	Geologist		41	4	P12	Power Concreti	on/Transmission/			
	3.21		12		112	Distribution	OII/ ITAIISIIIISSIOII/	1		
38	Land Surveyor		7	4	R03	Railroad; Rapid	Trancit	7		
57	Structural Engineer	1	.30	14	S03	Seismic Designs		1		
59	Engineering Technician	_	.07	7	S04	Sewage Coll./Tr		5		
60	Transportation Engineer		.90	36	S05	Soils/Geologic S		1		
						Foundations		1		
62	Water Resources Engineer		50	7	S07	Solid Wastes/Inc	cineration/Landfill	2		
	Facility/Maintenance & Suppor	t	18	1	S09		pecial Structures	1		
	Other Employees	3	04	0	S10	Surveying; Platti Flood Plain Stud		1		
Total		19	986	131	T03	Traffic & Transp		3		
	NNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM			PROFESS		SERVICES REVEN	UE INDEX NUMBER	3		
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				RIZED REPRES		IVE				
a. SIGNATU							b. DATE			
	J 11 11 11						6/2/2015			
c. NAME-AN	In the state of the	eng	7-							
Paul G. S	Schweiger, PE, CFM Vice Presiden	t								

	ARCHITECT-E	NGINEER	QUALIFIC	ATIONS		1. SOLICITATION NU	IMBER (if any)	
		PA	RT II - GE	NERAL O	UALIFIC	CATIONS		
	(If a firm has	s branch offi	ices, comp	lete for eac	h specif	fic hranch office ea	okina work l	
(If a firm has branch offices, complete for each						ESTABLISHED 4. DUNS	NUMBER	
	annett Flemin	III Distala			6-4112			
2b. STREE	T T	Pittsbur	gn, PA		 			
Foster F	Plaza 8, 730 Holiday Dri	ve. Suite 400			a. TYPE	5. O	WNERSHIP	
2c. CITY		2d. STAT			Corpo	ration		
Pittsbu		PA	15220					
	OF CONTACT NAME AND TITLE					BUSINESS STATUS		
6b. TELEPI	. Kovacs, PE, PMP, DGE,	Senior Vice	President		N/A			
	22-5575	jkovacs@gfi			7. NAME	OF FIRM (If block 2a is a bran	ch office)	
		IRM NAME(S) (if a				tt Fleming Affiliates . YR. ESTABLISHED		
		N/A				N/A	8c. DUNS NU	MBER
9. EMPL	OYEES BY DISCIPLINE						RM'S EXPERIENCE	AND
			c. No. of Emp		AI	NUAL AVERAGE RE	VENUE FOR LAST 5	YEARS
a. Function			C. NO. OF EMP		1			c. Revenue Index
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02	Administrative		323	16	B02	Bridges	enença	(see below
80	CADD Technician		88	6	C15	Construction Mar	12gement	6
14	Computer Programm	er	117	3	D01	Dams (Concrete;		2
15	Construction Inspecto		160	12	D02			1
16	Construction Manage		79	5	E01	Dams (Earth/Rock		2
21	Electrical Engineer		99	1	E07	Ecological/Archeo		1
	3		33	, -	EU/	Energy Conservat	ion; New Energy	1
24	Environmental Scient	ict	52		500	Sources		
27	Foundation/Geotechr		54	1	E09	EIS, EA, Environm		2
	Engineer	lical	54	7	E12	Environmental Re	mediation	2
29	Geographic Informati	on Cuetana	42					
	Specialist	on system	43	1	G04	GIS Services: Deve		3
30						Analysis, and Data		
52	Geologist		41	5	H07	Highways/Streets,		5
UL	Sanitary Engineer		23	4	101	Industrial Bldgs; N	lanufacturing	1
57						Plants	-	
37	Structural Engineer		130	8	P05	Planning		1
59						(Comm/Reg/Area/	Statewide)	_
29	Engineering Technicia	n	107	12	P06	Planning (Site, Inst		1
						Project)	,	_
60	Transportation Engine		190	6	S03	Seismic Designs &	Studies	1
62	Water Resources Engi	neer	50	3	S04	Sewage Coll./Trea		6
	Other Employees		430	0	S09	Struct. Design; Spe		4
					S13	Stormwater Handi		
					T03	Traffic & Transport		1
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11. AN	INUAL AVERAGE PROFES	SSIONAL		PROFES	SIONALS	Supply/Treatment, SERVICES REVENUE	Distribution	
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		_	12. AUTHOR	IZED REPRE	SENTAT	VE	3	
a. SIGNATUR	E) // //	7	ne toregoir	ng is a statem	ent of fact	<u>s. </u>		
4	- V Lhl	\$1					6. DATE 6/2/2015	
c. NAME AND	TITLE YCHI	negg					0/2/2013	
	chweiger, PE, CFM, Vice	President						

	ARCHITECT	-ENGIN	EER (QUALIFIC	CATIONS		1. SOLICI	TATION	NUMBER (if any)	
			PAR	TII-GE	NERAL QU	ALIFIC/	ATIONS			
20 FIDM	(If a firm has	s branch	office	s, <mark>co</mark> mple	ete for each	specific	branch offic	e see	kina work.)	
OR.	TAGER ILLING Punxsutawney,					3. YEAR	ESTABLISHED	4. DUNS Pendi	NUMBER	
2b. STREE	Т							5. O	WNERSHIP	
2c. CITY	oodland Avenue Ext.		2d. STA	TE 2e. ZiP		a. TYPE	ration			
Punxsu	tawney		PA	1576		Corpo	ation			
6a. POINT Paul A.	OF CONTACT NAME AND TITLE						BUS-INESS STATU	JS		
	HONE NUMBER	6c. EMAII	ADDRES	SS		N/A	OF FIRM (If block 26			
(814) 93	38-7370	phale(Ganne	tt Fleming Afl	is a bra. Filiates	nch office) : Inc	
	8a. FORMER	FIRM NAME	S) (if any))		8b. '	YR. ESTABLISHED			NS NUMBER
O EMPL	OYEES BY DISCIPLINE	N/A					N/A	05 515	A PO EVE	N/A
9. EIVIPL	TEES BY DISCIPLINE					AN	10. PROFILE NUAL AVERAC	OF FIF	(M'S EXPERIE /ENUE FOR L	NCE AND AST 5 YEARS
Function Code	h Pitati-Pi			c. No. of Emp	-	a. Profile				c. Revenue Index Number
02	b. Discipline Administrative			(1) FIRM	(2) BRANCH	Code		Experier	ice	(see below)
30	Geologists			323	1	B02	Bridges			2
42	Mechanical Engineers			41	1	C10	Comm. Bldg			1
70	Drillers			28	1	D02	Dams (earth/rock)		11	
	Other Employees			23	20	E13	Env Testing			1
	Other employees			1571	0	H07	Highways/S			44
						H09	Hospitals/N		Fac	1
						H10	Hotels; Mot			11
						P04	Pipelines (x-	-count	ry)	1
						S04	Sewage Collection/T	roote		1
					 	S05	Soils/Geolog			
						S07	Solid Waste			1
						T05	Towers (self			1
							Water Resor			1
						W02	Hydrologic	urces,		1
						W03	Water Supp	lv/Tre	atment	1
						X10	Utilities (Puk			2
						X23	Quarries			1
Total				1986	23	X24	Coal & Mine	ral Ex	ploration	5
S (insert	NNUAL AVERAGE PROFE ERVICES REVENUES OF FOR LAST 3 YEARS revenue index number sho	FIRM	n	1. Less that	PROFESS an \$100,000 00 to less than		ERVICES REVI	ENUE 6. \$ 2	INDEX NUMBI	ER
a. Federal Wo		1		3. \$250,00	0 to less than !	500.000		8. \$10	million to less	han \$10 million than \$25 million
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a. SIGNATUR				ne lotegoir	ig is a stateme	IL OT FACES	·		b. DATE	
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	Kovacs, PE, PMP, DGE, C	hairman	(L.G. F	Hetager Dr	illing, Inc., Ch	nairman)				

ARCHITECT - ENGINEER QUALIFICATIONS 1. SOLICITATION NUMBER (If any) PART II - GENERAL QUALIFICATIONS (If a firm has branch offices, complete for each specific branch office seeking work.) 2a. FIRM (OR BRANCH OFFICE) NAME 3. YEAR 4. DUNS Cultural Resource Analysts, Inc. (West Virginia Branch Office) **ESTABLISHED** NUMBER 1994 603124587 2b. STREET 5. OWNERSHIP 3556 Teays Valley Road, Suite 3 S Corporation 2c. CITY 2d. STATE 2e, ZIP CODE **b. SMALL BUSINESS STATUS** Hurricane WV25560 6a. POINT OF CONTACT NAME AND TITLE 7. NAME OF FIRM (If block 2a is a branch C. Michael Anslinger, Senior Vice President, East Region 6b. TELEPHONE NUMBER 6c. E-MAIL ADDRESS (304) 562-7233 manslinger@crai-ky.com 8a. FORMER FIRM NAME(S) (If any) **8b.YR ESTABLISHED** 8c. DUNS NUMBER [Insert] 10. PROFILE OF FIRM'S EXPERIENCE AND 9. EMPLOYEES BY DISCIPLINE **ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS** c. No. of Employees c. Revenue a. Profile **Function** b. Discipline b. Experience **Index Number** Code (1) FIRM (2) BRANCH Code (see below) 02 Administrative 9 C02 Cemeteries (Planning & Relocation) 05 Archaeologist 43 4 C14 Conservation & Resource Management 08 CADD Technician 4 E01 Archaeology 5 Geographic Information Sys. 29 4 1 G04 Geographic Information System Service 1 Specialist 58 Technician/Analysts 17 3 H08 Historical Preservation Architectural Historian 6 0 R07 Remote Sensing Other Employees Total 10 11. ANNUAL AVERAGE PROFESSIONAL PROFESSIONAL SERVICES REVENUE INDEX NUMBER SERVICES REVENUES OF FIRM FOR LAST 3 YEARS Less than \$100,000 \$2 million to less than \$5 million (Insert revenue index number shown at right) \$100,000 to less than \$250,000 \$5 million to less than \$10 million a. Federal Work \$250,000 to less than \$500,000 \$10 million to less than \$25 million b. Non-Federal Work \$500,000 to less than \$1 million \$25 million to less than \$50 million 5 \$1 million to less than \$2 million \$50 million or greater c. Total Work 5 12. AUTHORIZED REPRESENTATIVE The foregoing is a statement of facts. a. SIGNATURE b. DATE 5-30-2015 C. NAME AND TITLE

C. Michael Anslinger, MA, RPA, Senior Vice President, East Region

	ARCHITECT – ENGI	NEER	QUA	LIFICA'	TIONS	1. SOLICITATION N	JMBER (If any)
		PART II	- GENE	RAL QUA	LIFICATIONS		
	(If a firm has branc	h offices.	complete	for each si	pecific branch off	ice seeking work	
2a. FIRM (ON BRAITCH OFFICE) NAME					3. YEAR	4. DUNS
Cultura	l Resource Analysts, Inc. (Co	rporate	Office)			ESTABLISHED	NUMBER
2b. STREE1						1983	603124587
	alton Avenue					5, OW	NERSHIP
131 44 5	mon Avenue					a. TYPE	
2c. CITY						S Corporation	
Lexingt	/\m			2d. STATE	2e. ZIP CODE	b. SMALL BUSINESS S	TATUS
	OF CONTACT NAME AND TITLE			KY	40508	SB	
	M. Niquette					7. NAME OF FIRM (II	block 2a is a branch
6h TELEDU	ONE NUMBER					office)	
859-252			6c. E-MAIL				
	ER FIRM NAME(S) (If any)		emniqu	ette@crai	-ky.com		
ba. FURING	ER FIRM NAME(S) (If any)					8b.YR ESTABLISHED	8c. DUNS NUMBER
				Υ			
	9. EMPLOYEES BY DISCIPLI	NE			10. PROFILE	OF FIRM'S EXPERIENCE GE REVENUE FOR LAST	AND
a. Function		c. No. i	of Employees	a. Profile	ANTOAL AVERA	GE REVENUE FOR LAST:	C. Revenue
Code	b. Discipline	(1) FIRM	(2) BRANC	4.1101116	1	b. Experience	Index Number
02	Administrative	4	(2) 510/110	C02	C 4 ' (D)		(see below)
05	Archaeologist	20	 	C14	Comparation 8	nning & Relocation)	
08	CADD Technician	3		E01	Archaeology	Resource Managemen	
29	Geographic Information Sys.						7
	Specialist	3		G04	Geographic Info	rmation System Service	e 1
58	Technician/Analysts	11		H08	Historical Preser	rvation	2
-	Architectural Historian	4		R07	Remote Sensing		
				 			
		ļ					
	Other Employees						
	Total	45					
	11. ANNUAL AVERAGE PROFESSIONA	L		PR	OFESSIONAL SERVIC	CES REVENUE INDEX NUM	IDED
	SERVICES REVENUES OF FIRM				or notice of the	NEO WEALUGE MARK MAN	IDEK
	FOR LAST 3 YEARS (Insert revenue index number shown at right)		1.	Less than \$1		6. \$2 million to less	than \$5 million
a. Federal Wor	rk 4		2, 3,	\$100,000 to le	ess than \$250,000	7. \$5 million to less	than \$10 million
b. Non-Federa			4.		ess than \$500,000 ess than \$1 million	8. \$10 million to les 9. \$25 million to les	s than \$25 million s than \$50 million
c. Total Work	7		5.	\$1 million to	less than \$2 million	10. \$50 million or gre	eater
	0 0 /. 1	12.	AUTHORIZE	D REPRESEN	TATIVE		
a. SIGNATURI	11 11 1111	1116	INIAROUND !	s a statement	ot facts.	b. DATE	
	Mariote H					5/30/2015	
. NAME AND	TITLE					C1021061C	
C	harles M. Niquette, MA, RPA	A. Presid	lent/Chie	f Executiv	e Officer		
	1	-,	- VIII	T PVOCHET	A OTTICEI		

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.

Addendu	ım I	Numbers Received:						
(Check the box next to each addendum received)								
[\	/]	Addendum No. 1	ĺ]	Addendum No. 6			
£	J	Addendum No. 2	ľ]	Addendum No. 7			
[]	Addendum No. 3	[]	Addendum No. 8			
[]	Addendum No. 4	[]	Addendum No. 9			
ĺ]	Addendum No. 5	[]	Addendum No. 10			
turtner und discussion	ders hel	tand that any verbal repress d between Vendor's repress	entatior entativo	n ma es a	Idenda may be cause for rejection of this bid. I ade or assumed to be made during any oral any state personnel is not binding. Only the ifications by an official addendum is binding.			
				Go	annett Fleming Inc.			
				6	Compañy Authorized Signature			
				· · · · · · · · · · · · · · · · · · ·	June 2, 2015 Date			

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing. Revised 6/8/2012

CERTIFICATIONAND 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.

Gannett Fleming, Inc.

(Company)

(Authorized Signature) (Representative Name, Title)

717-763-7211 717-763-8150 June 2, 7015 (Phone Number) (Fax Number) (Date)

RFQ No.	
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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 § 23-20-2, 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 exceed five percent of the total

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: Gannett Fleming, Inc.)
Authorized Signature: Date: Man 28, 2015
State of Pennsylvania County of Cumber and, to-wit:
Taken, subscribed, and sworn to before me this 21 day of
My Commission expires December 16, 2018.
AFFIX SEAL HERE NOTARY PUBLIC Josef J. James
COMMONWEALTH OF PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA

NOTARIAL SEAL

Jennifer L. Bajuer, Notary Public

Franklin Twp., York County

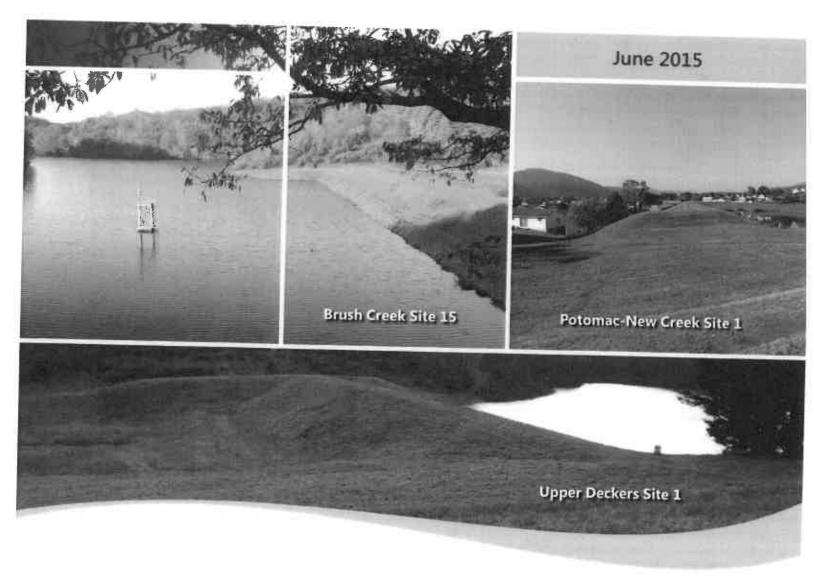
My Commission Expires Dec. 16, 2018

MEVSER, FENNSYLVANIA ASSOCIATION OF NOTAIGES





Watershed Dam Rehabilitation Program



Submitted by:

