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

State of West Virginia
Centralized Expression of Interest
02 — Architect/Engr

Proc Folder: 426747

Doc Description: EOI - Weston (Williams) Landslide - EPAM16027

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2018-08-16	2018-09-12 13:30:00	CEOI 0313 DEP1900000002	1

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

Vendor Name, Address and Telephone Number:

Gannett Fleming, Inc.
730 Holiday Drive
Foster Plaza I, Suite 400
Pittsburgh, PA 15220
412-922-5575

RECEIVED
2018 SEP 12 AM 8:52
WV PURCHASING DIVISION

FOR INFORMATION CONTACT THE BUYER
Brittany E Ingraham
(304) 558-2157
brittany.e.ingraham@wv.gov

Signature X  FEIN # 25-1613591 DATE 09/10/2018

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Expression of Interest

Weston (Williams) Landslide

The West Virginia Purchasing Division is soliciting Expression(s) of Interest for the Agency, the Department of Environmental Protection, from qualified firms to provide architectural/engineering services to provide necessary engineering, and other related professional services to design and specify for construction as well as provide construction administration, for the Weston (Williams) Landslide, per the bid requirements, specifications, terms and conditions as attached hereto.

*Online submissions of Expressions of Interest are prohibited.

INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue
1	EOI Engineering Design Services		

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description :

*Dates of Service are estimated for bidding purposes only.

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

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

State of West Virginia
Centralized Expression of Interest
02 — Architect/Engr

Proc Folder: 426747

Doc Description: Addendum 1 - EOI - Weston (Williams) Landslide - EPAM16027

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2018-09-10	2018-09-12 13:30:00	CEOI 0313 DEP1900000002	2

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

Vendor Name, Address and Telephone Number:

Gannett Fleming, Inc.
730 Holiday Drive
Foster Plaza I, Suite 400
Pittsburgh, PA 15220
412-922-5575

FOR INFORMATION CONTACT THE BUYER

Brittany E Ingraham
(304) 558-2157
brittany.e.ingraham@wv.gov

Signature X  FEIN # 25-1613591 DATE 09/10/2018

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum

Addendum No.01 issued to publish and distribute the attached information to the vendor community.

****

Expression of Interest

Weston (Williams) Landslide

The West Virginia Purchasing Division is soliciting Expression(s) of Interest for the Agency, the Department of Environmental Protection, from qualified firms to provide architectural/engineering services to provide necessary engineering, and other related professional services to design and specify for construction as well as provide construction administration, for the Weston (Williams) Landslide, per the bid requirements, specifications, terms and conditions as attached hereto.

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ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue
1	EOI Engineering Design Services		

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description :

*Dates of Service are estimated for bidding purposes only.

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CEOI 0313 DEP 1900000002

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

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

Addendum Numbers Received:
(Check the box next to each addendum received)

[✓] Addendum No. 1	[ ] Addendum No. 6
[ ] Addendum No. 2	[ ] Addendum No. 7
[ ] Addendum No. 3	[ ] Addendum No. 8
[ ] Addendum No. 4	[ ] Addendum No. 9
[ ] Addendum No. 5	[ ] Addendum No. 10

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

Gannett Fleming, Inc
Company

Authorized Signature

9/10/18
Date

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

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

Mitchell W. Weber

(Name, Title)
Mitchell Weber, PG, Project Manager

(Printed Name and Title)
3340 West Market Street, lst Floor, Fairlawn, OH 44333

(Address)
330-436-7121/no fax

(Phone Number) / (Fax Number)
mweber@gfnet.com

(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated 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)

Terry Downs, PG, Vice President

(Printed Name and Title of Authorized Representative)

09/10/2018

(Date)

412-922-5575

(Phone Number) (Fax Number)

West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

Pursuant to *W. Va. Code* § 6D-1-2, a state agency may not enter into a contract, or a series of related contracts, that has/have an actual or estimated value of $1 million or more until the business entity submits to the contracting state agency a Disclosure of Interested Parties to the applicable contract. In addition, the business entity awarded a contract is obligated to submit a supplemental Disclosure of Interested Parties reflecting any new or differing interested parties to the contract within 30 days following the completion or termination of the applicable contract.

For purposes of complying with these requirements, the following definitions apply:

"Business entity" means any entity recognized by law through which business is conducted, including a sole proprietorship, partnership or corporation, but does not include publicly traded companies listed on a national or international stock exchange.

"Interested party" or *"Interested parties"* means:

(1) A business entity performing work or service pursuant to, or in furtherance of, the applicable contract, including specifically sub-contractors;
(2) the person(s) who have an ownership interest equal to or greater than 25% in the business entity performing work or service pursuant to, or in furtherance of, the applicable contract. (This subdivision does not apply to a publicly traded company); and
(3) the person or business entity, if any, that served as a compensated broker or intermediary to actively facilitate the applicable contract or negotiated the terms of the applicable contract with the state agency. (This subdivision does not apply to persons or business entities performing legal services related to the negotiation or drafting of the applicable contract.)

"State agency" means a board, commission, office, department or other agency in the executive, judicial or legislative branch of state government, including publicly funded institutions of higher education: Provided, that for purposes of W. Va. Code § 6D-1-2, the West Virginia Investment Management Board shall not be deemed a state agency nor subject to the requirements of that provision.

The contracting business entity must complete this form and submit it to the contracting state agency prior to contract award and to complete another form within 30 days of contract completion or termination.

This form was created by the State of West Virginia Ethics Commission, 210 Brooks Street, Suite 300, Charleston, WV 25301-1804. Telephone: (304)558-0664; fax: (304)558-2169; e-mail: ethics@wv.gov; website: www.ethics.wv.gov.

West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

(Required by *W. Va. Code* § 6D-1-2)

Name of Contracting Business Entity: Gannett Fleming, Inc. **Address:** 730 Holiday Drive, Foster Plaza 8, Suite 400 Pittsburgh, PA 15220

Name of Authorized Agent: Terry Downs, PG **Address:** 730 Holiday Drive, Foster Plaza 8, Suite 400 Pittsburgh, PA 15220

Contract Number: CEOI 0313 DEP1900000002 **Contract Description:** Weston (Williams) Landslide

Governmental agency awarding contract: West Virginia Department of Environmental Protection

☐ **Check here if this is a Supplemental Disclosure**

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below *(attach additional pages if necessary)*:

1. **Subcontractors or other entities performing work or service under the Contract**
   ☒ Check here if none, otherwise list entity/individual names below.

2. **Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**
   ☐ Check here if none, otherwise list entity/individual names below.
   Gannett Fleming, Inc. is 100% owned by Gannett Fleming Affiliates, Inc.

3. **Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**
   ☒ Check here if none, otherwise list entity/individual names below.

Signature: _____ Date Signed: 09/10/2018

Notary Verification

State of PA, County of ALLEGHENY:

I, TERRY DOWNS, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 10th day of Sept., 2018.

_____
Notary Public's Signature

To be completed by State Agency:

Date Received by State Agency: _____

Date submitted to Ethics Commission: _____

Governmental agency submitting Disclosure: _____

Commonwealth of Pennsylvania - Notary Seal
Gloria J. Fritz, Notary Public
Allegheny County
My commission expires December 8, 2021
Commission number 1054158
Member, Pennsylvania Association of Notaries

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

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

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

DEFINITIONS:

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

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

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

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, 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: 9-10-18

State of PA

County of ALLEGHENY, to-wit:

Taken, subscribed, and sworn to before me this 10th day of September, 2018.

My Commission expires 12-8, 2021.

AFFIX SEAL HERE

NOTARY PUBLIC _____

Commonwealth of Pennsylvania - Notary Seal
Gloria J. Fritz, Notary Public
Allegheny County
My commission expires December 8, 2021
Commission number 1054158
Member, Pennsylvania Association of Notaries

Gannett Fleming

Excellence Delivered As Promised

September 11, 2018

Ms. Brittany Ingraham
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

RE: Solicitation No.: CEOI DEP1900000002, Weston (Williams) Landslide

Dear Ms. Ingraham:

Gannett Fleming has been providing world class engineering, consulting, and construction services to our clients for more than 100 years. Uniquely positioned as one of the few remaining independent and privately-owned engineering companies, we take pride in being a top 10% engineering company per the *Engineering News-Record* having an annual revenue of more than $400M and employing more than 2,200 highly skilled professionals.

Throughout our history, Gannett Fleming's visionary leaders have been very successful in identifying our clients' needs and delivering slope stabilization solutions through innovation, technology and alternate project delivery. Over the past 50 years, our highly recognized and regarded experts have been thought leaders in the geotechnical industry having served in countless professional societies and holding prominent leadership positions.
Our companywide Practice Leadership Teams ensure that your project receives the appropriate expertise for every issue. Our specialized expertise is a direct testament to our dynamic team of professionals who demonstrate an unyielding commitment to excellence on every project, every day. When you work with us, these professionals are at your disposal. We approach each project with unparalleled enthusiasm and creativity. More importantly, we work hard to develop relationships with our clients and maintain them by providing consistent, high-quality services. This tradition of excellence began with our simple beginning and has become the mantra of all our employees today.

Gannett Fleming's geotechnical practice includes more than 70 geotechnical engineers and geologists, many with extensive experience in slope stabilization projects, including large rock and soil slides. Gannett Fleming also has other engineering disciplines such as structural, transportation, hydraulic, and environmental to support our slope stabilization design evaluations as required for any given project and design.

We look forward to the opportunity to serve as your engineering partner. Please contact me at 412-922-5575 or tdowns@gfnet.com or Mitch Weber, PG at 330-472-1667 or mweber@gfnet.com if you have any questions regarding this submission.

Sincerely,
GANNETT FLEMING, INC.

Terry Downs, PG
Vice President

Gannett Fleming, Inc.

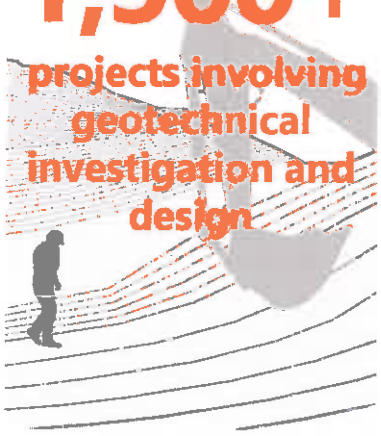
Foster Plaza 8, Suite 400, 730 Holiday Drive • Pittsburgh, PA 15220
t: 412.922.5575 • f: 412.922.3717
www.**gannettfleming**.com

Table of Contents

1. Staff Qualifications and Experience

1,500+

projects involving geotechnical investigation and design



Exploration, analysis, and design related to soil, rock, and groundwater is an essential part of every project. Gannett Fleming provides solutions for lateral support, foundation design and rehabilitation, underground construction, earth structures, and groundwater resources. Gannett Fleming's size and diversity provide experience with geotechnical applications to a wide variety of projects, large and small, simple and complex, and including a variety of intrusive and non-intrusive site investigations. Our experience in various geologic settings helps us address such concerns as landslides, sinkholes/ cavities, mine subsidence, seepage, expansive soils, and seismic activity. This experience extends from initial site investigations through design, construction, and performance evaluation.

Gannett Fleming's geotechnical practice includes over 70 geotechnical engineers and geologists, many with extensive experience in slope stabilization projects, including large rock and soil slides. Gannett Fleming also has other engineering disciplines such as structural, transportation, hydraulic, and environmental to support our slope stabilization design evaluations as required for any given project and design.

Throughout our history, the firm's visionary leaders have been very successful in identifying our clients' needs and delivering slope stabilization solutions through innovation, technology and alternate project delivery. In the early 1990's, we were pioneers using the emerging soil nail technology in the United States to stabilize a failing mechanically stabilized earth (MSE) wall along a busy urban roadway for a DOT client. Since then, our highly recognized and regarded experts have been thought leaders in geostabilization industry having served in countless professional societies and holding prominent leadership positions.

Project Manager Mitch Weber, PG is an active member of the Association of Engineering Geologists and has written 10 papers on landslide remediation and mine subsidence in the region. Geotechnical Project Manager Matt Morris, PG, a Past President of the Association of Environmental and Engineering Geologists, recently traveled the country meeting with regional chapters and presenting on topics of geohazards. Through Matt's extensive exposure to geohazards, he is often called upon by GeoBrugg, a worldwide manufacturer of geohazards stabilization materials, to consult on projects and to evaluate new products for slope stabilization.

27

Average Years of Experience

100+

Similar Projects

Gannett Fleming has significant experience in landslide investigation and the design of remedial measures for earth slides, rock slides, and rock falls and has worked on recent slide projects. In the past five years, Gannett Fleming has designed more than 25 landslide projects, including both design-build and design-bid-build.

Our firm has engaged in the design, inspection, rehabilitation, and reconstruction of retaining walls for more than 50 years. We have experience with numerous wall types, including cast-in-place concrete cantilever walls, permanent and temporary soldier pile walls, MSE walls, anchored and cantilever prestressed concrete sheet pile walls, modular prefabricated walls, soil nail walls, secant walls, and structural slurry walls. Wall sizes range from minor walls along streams and roads to major structures for roadway interchanges, underground structures, and railroad embankments.

Inspection of existing retaining walls includes evaluating the extent of structural deterioration, and noting any settlement, tilting, global stability, or drainage issues. Selecting a rehabilitation or reconstruction strategy is based on several factors, including a comparison of costs (construction and life cycle cost analysis), the feasibility of the rehabilitation, and the estimated remaining life of the final rehabilitated wall.

Reconstruction of retaining walls includes the determination of the most appropriate and cost-effective wall type. Factors considered when selecting the wall type include minimizing right-of-way acquisition, minimizing impacts to the traveling public, subsurface conditions, constructability, and owner preferences.

Key team member resumes are provided on the following pages, and our proposed staffing plan is presented in Section 4.

Mitchell Weber, PG

Project Manager

Summary of Qualifications and Experience

Mr. Mitchell Weber will use his extensive landslide, geologic, AML evaluation and design, and project management experience to lead the project team, ensuring adherence to schedule requirements and serving as your primary point of contact. He has over 30 years of experience in engineering geology and geotechnical design services and has authored more than 20 publications and presentations about a variety of geotechnical and geological topics. Mitch also has extensive experience in addressing emergency and construction-related issues that arise, and applying quick, sound, and efficient solutions. Mitch has evaluated over 200 landslides, and provided recommendations for remediation, including in emergency situations. Mitch has managed the Ohio Department of Natural Resources (ODNR's) two-year AML and AMD contracts eight different times over the past 20 years. Similarly, Mitch managed and/or designed for the Office of Surface Mining, Reclamation, and Enforcement, (OSMRE) eastern and western Pennsylvania field office contract for more than 12 years, completing projects in Pennsylvania, Ohio, Maryland, Iowa, and Tennessee.

Relevant Work Experience

Osage Mine Complex Reclamation, Monongalia County, WV, *West Virginia Department of Environmental Protection.* Geotechnical Manager for the preparation of construction plans and specifications for the reclamation of five abandoned mining sites under the Abandoned Mine Lands and Reclamation Program. Reclamation measures included mine portal and shaft closures, refuse pile regrading and revegetation, landslide stabilization, building demolition, and drainage improvements.

AML Emergency Contract, Columbus, OH, *ODNR.* Geotechnical Project Manager for a 2-year contract to perform geotechnical and geological evaluations related to abandoned mine projects. Five task orders were completed under this contract to design mitigation alternatives to mine subsidence affected properties. Work generally consisted of performing site inspections and subsurface investigations; evaluating mine subsidence potential; developing remedial designs; and preparing construction plans, specifications, and cost estimates. Responsible for performing site inspections, planning subsurface investigations, reviewing abandoned mine land maps and mining data, assessing the probability of mine subsidence, developing alternative causes of observed damage, and preparing construction contract documents.

AML Contracts, Various Locations, OH, *ODNR.* Project Manager responsible for providing consulting engineering services for AML projects. Projects included abandoned highwall reclamation, landslide remediation, mine subsidence evaluations, mine drain rehabilitation, abandoned mine shaft capping, and mine seal and bat gate designs. Responsibilities involved site investigations, preliminary and final designs, and the preparation of construction contract documents. Completed 18 AML projects under these contracts.

33 Years of Experience

Years of Experience with Gannett Fleming: 32

Professional Registrations:

PG: PA

Education:

BS, Geology, Mount Union College, 1982

MS, Geology, Kent State University, 1985

Professional Affiliations:

Association of Environmental and Engineering Geologists (AEG)

American Society of Civil Engineers (ASCE)

Association of State Dam Safety Officials (ASDSO)

Society of American Military Engineers (SAME)

Landslide Assessments, Various Locations, OH, PA, KY, and WV, *Soil Nail Launchers, Inc.* Project Manager/Senior Engineering Geologist for a project involving landslide remediation using drilled or launched soil nails. Specific responsibilities included assessing individual landslides to determine the applicability of the technology for remediation; determining the nail density and pattern, as well as the project lay out; and monitoring construction. More than 60 sites were assessed and 40 were repaired for a variety of county engineers, contractors, private homeowners, and departments of transportation.

AML Reclamation Projects, Various Locations, OH, *ODNR.* Geotechnical Project Manager providing consulting engineering services on a task basis. The scope of the projects included the abatement of AMD, the reclamation of highwalls, and the mitigation of landslides.

AML Emergency Contract, Columbus, OH, *ODNR.* Geotechnical Project Manager for a two-year contract to perform geotechnical and geological evaluations related to abandoned mine projects. Task orders under this contract were used to collect data to determine if a site was eligible for AML mine subsidence funds to repair or mitigate damage to affected properties. Work generally consisted of performing site inspections and subsurface investigations; evaluating mine subsidence potential; developing remedial designs; and preparing construction plans, specifications, and cost estimates. Responsible for performing site inspections, planning subsurface investigations, reviewing abandoned mine land maps and mining data, assessing the probability of mine subsidence, developing alternative causes of observed damage, and preparing construction contract documents.

AMD Abatement Contract, Columbus, OH, *ODNR.* Geotechnical Project Manager for a two-year contract to perform evaluations and remedial designs related to AMD projects. Task orders under this contract consisted of performing site assessments; determining AMD chemistry; developing remedial designs; and preparing construction plans, specifications, and cost estimates. Responsible for performing site reconnaissance, assessing existing soil and rock conditions, determining hydraulics and hydrology, and evaluating construction materials.

C.R. 53 Landslide Repair, Jefferson County, OH, *Jefferson County Board of Commissioners.* Project Principal for an assessment of a shallow landslide affecting a 350-foot length of roadway and the final design to repair it. The project involved stabilizing the landslide by reconstructing the road subgrade to original grade with cement-treated backfill and installing a groundwater drainage system. Responsibilities included developing the work scope and reviewing the geotechnical engineering report.

County Road 56 Landslide Evaluation, Jefferson County, OH, *Jefferson County Board of Commissioners.* Geotechnical Project Manager for the design of a landslide mitigation alternative to facilitate the reconstruction of about 250 feet of county roadway affected by the landslide. The project involved stabilizing the landslide with a combination of micropiles with a concrete cap and constructing a geogrid tied-back, vinyl sheet pile retaining wall to capture the lost shoulder width. The innovative combination of these technologies enabled the County to build a safe structure on a 0.25:1 slope. The wall was penetrated by a stormwater outlet pipe and shallow soil nails or rock anchors were used to "hang" Geoweb® slope protection on the steep slope, thereby resisting undercutting of the slope from the pipe discharge. Plans, specifications, cost estimates, and construction-phase services were also provided.

Tong Hollow Road Landslide Remediation, Ross County, OH, *Ross County Engineer's Office.* Geotechnical Project Manager for an emergency landslide assessment and remedial design for a slip affecting about 400 feet of Tong Hollow Road. The slip resulted in a lengthy detour affecting residents and local businesses. The boring investigation was completed in July 2010 and the final plans were submitted to the County Engineer five weeks later. The remediation was a combination of interior drainage, soil modification, and grading improvements. Services included subsurface exploration and testing, slope stability analysis, development of conceptual design alternatives and cost estimations, presentation of the design alternatives to the County Board and County Engineer, preparation assistance for an Ohio Public Works Commission grant application, and preparation of the final design plans, specifications, and cost estimate.

GANNETT FLEMING, INC.

Matthew Morris, PG

Geotechnical Project Manager

Summary of Qualifications and Experience

Mr. Matthew Morris, PG will utilize his 20 years of experience, including more than 25 landslide and retaining structure projects to serve as Geotechnical Project Manager. His experience includes developing and managing subsurface exploration programs, preparing geotechnical guidance reports, and developing plan, specification, and estimate (PS&E) packages. He also frequently provides peer reviews and expert witness services for rock slop stability and landslide mitigation projects. Matt has experience in subsurface program development and management; geotechnical design analysis and evaluation; report, plan, and specification development; and construction services.

Relevant Work Experience

Geotechnical Consulting Services, S.R. 3088 B03, Hill Road Landslide Repair, Pittsburgh, PA, *GeoBuild, LLC.* Senior Engineering Geologist responsible for managing the design of a landslide mitigation project impacting S.R. 3088 within District 11. Our firm was the subconsultant to the geotechnical contractor responsible for the construction of the mitigation solution. Mitigation tasks included field reconnaissance, subsurface investigation, development of mitigation designs, and construction consultation. Mitigation schemes included stabilization of the roadway with rock buttressing, soil nails, and high tensile strength wire mesh.

Open-End Engineering Services, S.R. 0271 Menoher Boulevard Emergency Slope Stabilization, Harrisburg, PA, *Pennsylvania Department of Transportation (PennDOT), Bureau of Design.* Senior Engineering Geologist responsible for the evaluation and design of a landslide mitigation under accelerated design and construction schedules. The landslide occurred in the embankment of the roadway and moved down slope severely damaging a residential home. Project activities included the initiation of a subsurface exploration plan and design of a rock buttress to stabilize the embankment. Our firm worked with the Pennsylvania Department of Transportation, Bureau of Design and a contractor during the design and construction process to stabilize the slide in a manner to allow continued traffic on S.R. 271.

Landslide Stabilization Projects, Northeast OH and Western PA, *Various Clients.* Engineering Geologist responsible for the evaluation, mitigative design, and construction management of 20 design-build landslide stabilization projects. Coordinated work with geotechnical construction contractor specializing in design-build landslide mitigation using soil nails, rock bolts, anchors, micropiles, grouting, and other in-situ mitigation measures. Activities included site reconnaissance, subsurface model

20 Years of Experience

Years of Experience with Gannett Fleming: 19

Professional Registrations:

PG: PA

Education:

BS, Geology, Clarion University of Pennsylvania, 1997

MS, Engineering Geology, Kent State University, 2004

Professional Affiliations:

AEG

ASCE

Geo-Institute

International Association of Engineering Geologists (IAEG)

Pennsylvania Council of Professional Geologists

Pittsburgh Geological Society

development, marketing, design evaluations, selection of mitigative alternative, and construction consultation

West Busway Landslide, Pittsburgh, PA, *Port Authority of Allegheny County.* Geotechnical Project Manager responsible for completing a slope stabilization design to mitigate a landslide adjacent to the Port Authority's West Busway transit route. The investigation included evaluating historical aerial photographs to determine past land use and prior slope instability issues, evaluating subsurface borings to determine the failure surface location, and providing conclusions and remedial alternatives to the Port Authority. The mitigation efforts included slope grading, installation of soil nails, and a high tensile steel wire mesh slope stabilization system.

Landslide Evaluations, Economy, PA, *Economy Borough Municipal Authority.* Engineering Geologist responsible for investigating and analyzing the structural stabilization of wastewater pump stations and sewage lines due to landslides. Project activities included site reconnaissance, landslide delineations, development of subsurface exploration plans, drilling inspection, interpretation of subsurface conditions, design of mitigative alternatives, and construction consultation.

Design-Build Landslide Stabilization Projects, Ohio River Valley, *Confidential Client.* Geotechnical Project Manager responsible for the evaluation, mitigative design, and construction management of five design-build landslide stabilization projects. Coordinated work with a geotechnical construction contractor specializing in design-build landslide mitigation using soil nails, rock bolts, grouting, and other in situ mitigation measures. Activities included site reconnaissance, marketing, design evaluations, selection of mitigative alternatives, and construction consultation.

S.R. 0588 and S.R. 3028 Landslide Mitigations, Beaver and Allegheny Counties, PA, *PennDOT, District 11-0.* Senior Engineering Geologist responsible for investigating two landslides that impacted two different roadways in District 11-0. The landslides occurred due to failures of the colluvial soils underlying the outer lane of the roadways. Tasks involved the development and management of a subsurface exploration program, slope stability analysis, preparation of geotechnical guidance reports, and the development of a design-build plan, specification, and estimate (PS&E) package. The landslide mitigation design selected for the two sites included the construction of a rock buttress and a soil nail wall for S.R. 0588 and S.R. 3028, respectively.

Mount Nebo Road Landslide, S.R. 4022, Allegheny County, PA, *PennDOT, District 11-0.* Engineering Geologist responsible for investigating a landslide that destroyed a two-lane roadway. The landslide occurred in colluvial soils beneath the roadway embankment and was caused by flooding and elevated groundwater tables associated with Hurricane Ivan. Tasks involved the development and management of a subsurface exploration program, slope stability analysis, development of a design-build plan and specification package, and construction consultation. The landslide was mitigated by using a combination of lateral drains, excavation and replacement of the slide mass, and installation of a tangent caisson wall on the upslope side of the roadway.

Freedom-Crider Road Safety Evaluation, S.R. 2004, Section B05, Beaver County, PA, *PennDOT, District 11-0.* Engineering Geologist responsible for delineating and determining the cause of a landslide adjacent to a two-lane highway. The landslide occurred in newly placed roadway embankment and was caused by inadequate drainage installation. Tasks involved the development and execution of a subsurface exploration program, stability analyses, and development of conceptual mitigation plans.

Terry Downs, PG

Quality Assurance/Quality Control

Summary of Qualifications and Experience

With more than 30 years of experience, Mr. Terry Downs, PG will provide timely and compliant quality assurance and quality control reviews for WVDEP.

Terry provides quality assurance oversight of reports, project drawings, and contract documents for constructability, as well as peer reviews for water resources, geotechnical, and transportation assignments. He has been responsible for quality assurance and technical guidance on more than 70 projects throughout his career including landslide, bridge, culvert, and dam related projects.

Relevant Work Experience

S.R. 2110, Section A03, Church Landslide, Open-End Contract for Geotechnical Services, Allegheny County, PA, *PennDOT, District 11-0.* Geotechnical Group Manager responsible for quality assurance and technical guidance associated with the design of a 220-foot retaining wall and roadway reconstruction to repair a section of four-lane roadway in Churchill Borough. The project consisted of a 300-foot failed fill section of roadway along an adjacent cemetery and residential neighborhood. The project was declared an emergency by the Department due to landslide propagation into the westbound travel lane. Accelerated design activities included project background research; subsurface test borings; environmental, utility, and right-of-way coordination; alternatives analyses; and development of a conceptual design. The design that was proposed to arrest the slide consisted of a midslope anchored retaining wall with a steepened rock embankment slope. The design was proposed to restore the roadway while maintaining traffic, avoiding numerous overhead utility lines traversing the site, and without encroaching on the adjacent historic grave sites. Final design-build plans, specifications, and a cost estimate were prepared within 8 weeks of the Notice to Proceed. Services also involved the review of contractor final design submissions for conformance with the project specifications and consultation during construction.

S.R. 2086, Section A03, Leechburg Road Landslide, Open-End Contract for Geotechnical Services, Pittsburgh, PA, *PennDOT, District 11-0.* Geotechnical Group Manager responsible for quality assurance and technical guidance associated with the design of a landslide repair along a two-lane roadway in Plum Borough. The project consisted of a 100-foot failed cut/fill section of roadway along the adjacent valley floor. The slope failure had been repaired by Department forces several times; however, the slide continued to progress, resulting in the closure of a portion of the roadway to a single alternating lane. Design activities included project background research; subsurface test borings; environmental, utility, and right-of-way coordination; preliminary alternatives analyses; slope stability analyses; and the development of alternatives for the preparation of a design-build

33 Years of Experience

Years of Experience with Gannett Fleming: 25

Professional Registrations:

PG: PA

Education:

BS, Geology, University of Pittsburgh, 1983

MS, Civil Engineering, University of Maryland, 1994

Professional Affiliations:

ASCE

construction package. Conceptual design plans, specifications, and cost estimates were prepared for the excavation of the landslide, its replacement with rock embankment, and reconstruction of the roadway. A detour plan was provided for maintenance and protection of traffic. Services also included a review of contractor final design submissions for conformance with the project specifications and consultation during construction.

Landslide Stabilization, Northeast OH and Western PA, *Stable Construction Company, LLC.* Geotechnical Project Manager responsible for the quality assurance and technical guidance for the evaluation, mitigative design, and construction management of 10 landslide stabilization projects. Duties included the oversight of the coordinated work with a geotechnical construction contractor specializing in design-build landslide mitigation using soil nails and other in situ mitigation measures. Activities included site reconnaissance, marketing, design evaluations, selection of mitigative technique, and construction consultation.

S.R. 3054, Segment 10, Baldwin Road Landslide, Open-End Contract for Geotechnical Services, Allegheny County, PA, *PennDOT, District 11-0.* Geotechnical Group Manager responsible for quality assurance and technical guidance associated with preliminary and final design services to remediate a landslide affecting approximately 150 feet of the northbound lane of Baldwin Road and two adjacent private properties. Preliminary design services included a review of record plans, field reconnaissance, review of subsurface data collected by Department forces, utility coordination, development of landslide remediation alternatives, and preparation of preliminary plans and cost estimates. Final design services included the preparation of final plans to install a rock buttress, supplemental drainage, and repair of private property facilities. Items of work included supplemental surveys, right-of-way coordination, landslide remediation detail preparation, final geotechnical engineering reports, final construction plans, specifications, and cost estimates.

S.R. 3028, Segment 10, Presto-Sygan Road Landslide, Open-End Contract for Geotechnical Services, Allegheny County, PA, *PennDOT, District 11-0.* Geotechnical Group Manager responsible for quality assurance and technical guidance associated with the preparation of conceptual design-build plans to abate a landslide encroaching along 500 feet of the northbound lane of S.R. 3028. The design services were performed on an accelerated basis due to the concerns of the condition of a 36-inch water transmission main traversing along the northbound shoulder and potential impacts of additional slide movements. Design services included a review of record drawings; field reconnaissance; review of subsurface data collected by Department forces; utility coordination; development of conceptual landslide remediation alternatives, including treatment of the undermined Pittsburgh coal; preparation of design alternatives; presentation to the Department; preparation of final design-build plans, special provisions, and cost estimates for the installation of closely spaced vertical caissons; and roadway repairs selected by the Department to remediate the landslide condition.

S.R. 0130, Segment 10, Coal Hollow Road Landslide, Open-End Contract for Geotechnical Services, Allegheny County, PA, *PennDOT, District 11-0.* Geotechnical Group Manager responsible for quality assurance and technical guidance associated with performing design services for the mitigation of a landslide from an adjacent property encroaching onto S.R. 0130 (Coal Hollow Road). The project consisted of the prevention of debris, including a 50-foot-high by 200-foot-long section of concrete, brick, and wood dumped on adjacent private property, from continuing to propagate onto the traveled roadway below. The project included the review of available published data, development of a stability model based on observations, review of geologic data and available aerial mapping, and the preparation of remedial alternatives and costs. Considerations for the design alternatives included constructability, availability of materials, and time of construction. The selected remediation consisted of a combination rock embankment with a reinforced-concrete caisson core. Final design services included the preparation of plans, specifications, and a cost estimate package for letting an emergency construction contract by the Department.

John Kovacs, PE, PMP, DGE

Project Principal

Summary of Qualifications and Experience

Mr. John Kovacs, PE, PMP, DGE will use his management and geotechnical engineering experience to provide project oversight, assistance, and leadership with the aim of improving outcomes for WVDEP. As Executive Vice President of Gannett Fleming he is authorized to commit the firm. John has nearly 25 years of experience including extensive experience in dam safety engineering. He has written numerous papers and conducted several presentations on geotechnical issues. In compliment to John's understanding of technical requirements, he also knows how to manage the execution of projects to ensure adherence to scope, schedule, budget and quality.

Relevant Work Experience

Mount Nebo Road Landslide, S.R. 4022, Allegheny County, PA, *PennDOT, District 11-0.* Project Manager responsible for the investigation and remedial design solution for a landslide that destroyed a two-lane highway. The landslide occurred in colluvial soils beneath the roadway embankment and was caused by flooding and elevated groundwater tables resulting from Hurricane Ivan. Tasks involved the development and execution of a boring program, slope stability analysis, development of a design-build plan and specification package, and construction consultation. The landslide was mitigated by using a combination of lateral drains, excavation and replacement of the slide mass, and installation of a tangent caisson wall on the upslope side of the roadway.

Hamblin Landslide Investigation, Clearfield, TN, *Office of Surface Mining.* Geotechnical Engineer responsible for providing geotechnical quality assurance for the site reconnaissance, field sampling, and subsequent soldier pile and lagging wall design to stabilize a landslide mass created by abandoned deep mining operations.

Indefinite-Delivery Contract for Engineering Design and Related Services, Various Locations, NY, OH, PA, and WV, *U.S. Army Corps of Engineers (USACE), Pittsburgh District.* Project Principal, Contract Manager, and Task Order Manager for a multidisciplinary architectural and engineering contract valued at $10 million over all option years. The services provided under the contract supports the USACE Pittsburgh District and the Lakes and River Division.

Independent External Peer Review, Safety Assurance Review, Nationwide, *USACE, Risk Management Center, Louisville District.* Project Principal and Contract Manager for a $12 million contract for architectural and engineering services for peer review, along with other technical reviews, evaluation of construction methods, and risk assessments.

25 Years of Experience

Years of Experience with Gannett Fleming: 23

Professional Registrations:

PE: West Virginia - No. [redacted] PA, OH, AK, KY, IL, MI, WI, NJ, MA, MN, NY, IO

Project Management Professional (PMP)

Diplomate, Geotechnical Engineering (DGE): Academy of Geo-Professionals

Education:

BS, Civil Engineering, Minor in Environmental Engineering, Carnegie Mellon University, 1993

MS, Civil and Environmental Engineering, The University of Pittsburgh, 1996

MBA, The University of Pittsburgh Katz Graduate School of Business, 1999

Professional Affiliations:

ASCE

ASDSO

SAME

Engineers Society of Western Pennsylvania

Engineers Without Borders

Geo-Institute

Project Management Institute

Open-End Geotechnical Contracts, Pittsburgh, PA, *PennDOT, District 11-0.* Geotechnical Project Manager responsible for providing technical review and coordination for multiple contracts with District 11-0 for geotechnical and geologic services. During four consecutive contracts, our firm acted as an extension of staff for the District 11-0 Geotechnical Unit. Work orders varied from providing geotechnical support services for PennDOT in-house designs to providing review comments for other consultants' geotechnical submissions to PennDOT. The assignments ranged in scope and complexity from simple peer review to major design efforts. Design tasks associated with assignments completed under the contract involved subsurface investigations, laboratory testing, geotechnical instrumentation monitoring, aerial photo reviews, slope stability analyses, rock slope investigations, foundation designs, retaining wall designs, geotechnical reports, rockfall evaluations, mining variances, and settlement analysis.

S.R. 0885, Sections A08, A09, A11, A12, and A13, "Boulevard of the Allies" Reconstruction, Allegheny County, PA, *PennDOT, District 11-0.* Geotechnical Project Manager responsible for the geotechnical investigation and design for the rehabilitation of approximately 1 mile of the Boulevard of the Allies, located at the crest of a nearly vertical 115-foot-high rock slope. The tasks included a review of published and unpublished literature and preparation of the District's Soils/Geological/Hydrological Setting Form, detailed geologic field reconnaissance, a geophysical study to determine the thickness of the existing concrete retaining structures, development and implementation of a subsurface exploration program consisting of vertical borings to identify stratigraphy and angled borings to identify the pattern of valley stress relief jointing, detailed evaluation of joint sets using stereonet technique and computer software, deep foundation design including drilled-in-place 8-inch-diameter micropiles at existing structure locations and for new sign foundations, shallow foundation design at new cantilever roadway sections, rock anchor design to stabilize existing concrete retaining structures, post-tensioned rock bolt design for the stabilization of the underlying rock slope, and design of a rockfall retaining system to minimize the potential for falling rocks to enter the travel lanes of the Parkway East. Design documentation included Phase I, Phase II, Pre-Final, and Final Geotechnical Engineering Reports, as well as Structure Foundation Reports for four structure locations. Gannett Fleming also used innovative design concepts and engineering practices and state-of-the-art technologies such as the use of a snooper truck for up-close, detailed geologic field mapping and oblique aerial photography via a subconsultant using a Precision Aerial Survey System Bell 47 helicopter and a Zeiss RMK TOP 15 precision aerial camera. Engineering services were provided during construction to expedite specific geotechnical issues. The project won the American Society of Highway Engineers Pittsburgh Section 2002 Outstanding Highway Engineering Award and was a finalist in the 2003 Pennsylvania Partnership for Highway Quality "Pennsylvania Excellence in Project Partnering Award."

S.R. 2004, Section B05, Freedom Crider Road Safety Project, Beaver County, PA, *PennDOT, District 11-0.* Geotechnical Engineer responsible for the guidance and peer review of project design features including one single-span bridge foundation, one culvert foundation, steepened embankments to minimize wetland encroachment, colluvial slope stabilization, rock toe-bench design, and a landslide remediation. The project consisted of a 1.52-mile section of roadway relocation and improvement involving significant cut slopes and embankments over soft alluvial and colluvial soils.

William Roman, PG
Geologist

Summary of Qualifications and Experience

Mr. William Roman, PG will use his extensive experience to provide detailed geologic services. Bill is routinely responsible for literature searches; field observation and reconnaissance; geologic mapping; on-site inspection of subsurface and geophysical investigations; collection, analysis, and reporting of geologic data required for engineering studies, analyses, and designs and to support expert witness services; and for training geologists and drilling inspectors. He is also responsible for monitoring drilling, water-pressure testing, and grouting operations during construction. Bill has served as geologist on more than 10 landslide or roadway collapse projects.

Relevant Work Experience

S.R. 0029, Section SLD, Landslide Remediation, Susquehanna County, PA, *PennDOT, District 4-0.* Senior Project Geologist responsible for observing standard penetration testing and piezometer installation in glacial till and lacustrine deposits. Surveyed new and existing inclinometers.

S.R. 0015, Section F10/12 (U.S. Highway 15) Mill Creek Landslide, Tioga County, PA, *PennDOT, District 3-0.* Senior Project Geologist responsible for reconnaissance (site visit and review of aerial photographs) and exploration (test borings, piezometers, and inclinometers) of a landslide affecting a side-hill embankment along a four-lane highway. Observed standard penetration testing through embankment fills and glacial deposits and collected samples for laboratory testing. Observed rock coring and logged rock cores. Measured water levels, collected and plotted inclinometer data, and helped develop project profiles and sections. Coordinated subsurface exploration program with the U.S. Army Corps of Engineers, Baltimore District, which operated the adjacent Tioga Reservoir. Collected and reviewed precipitation and pool level data.

S.R. 0885, Boulevard of the Allies, Pittsburgh, PA, *PennDOT, District 11-0.* Project Geologist responsible for inspecting test borings penetrating strata of Permian and Pennsylvanian age underlying cantilevered highway along the Duquesne Bluffs as part of a rock slope stability study. Reviewed geologic literature and prepared subsurface profile correlating test-boring data.

S.R. 125 – Subsidence Investigation, Engineering and Environmental Studies, Schuylkill County, PA, *PennDOT, District 5-0.* Provided oversight during a subsurface investigation of an area of roadway collapse above the subcrop of an underground anthracite mine. Observed standard penetration testing (SPT) of glacial and residual soils and coring of rock of the Pennsylvanian age Llwellyn Formation. Prepared a cross section of

35 Years of Experience

Years of Experience with Gannett Fleming: 35

Professional Registrations:

PG: PA, WI, TN, NY

Education:

BA, Geology and French, Beloit College, 1986

Graduate Courses: Groundwater Flow and Contaminant Transport, The Pennsylvania State University

Professional Affiliations:

Association of Environmental and Engineering Geologists

Geological Society of America

National Speleological Society

Pennsylvania Council of Professional Geologists

borings showing coal seam conditions across the roadway.

S.R. 0322 Realignment – Final Design and Construction Consultation Services, Potters Mills Gap, Centre County, PA, *PennDOT, District 2-0.* Geologist for preparation of reconnaissance soils and geological engineering reports for two bridges and several retaining walls. Reviewed published literature and mapping, performed field reconnaissance, and wrote sections of reports summarizing the geologic setting and stratigraphy (Reedsville through Juniata Formations), the existing subsurface information, and the anticipated environmental concerns. Inspected standard penetration testing and rock coring performed at proposed bridge abutment and pier locations.

S.R. 0015, Section 139, Rock Face Stability Study, Lackawanna County, PA, *PennDOT, District 3-0.* Geologist developing digital photogrammetric model of rock face in the Tuscarora Formation and a digital terrain model used to create sections for calculation of factor of safety and for rockfall analysis using the Colorado Rockfall Simulation Program. Used the digital photogrammetry model to measure discontinuity dip angles and dip directions, measure rock block dimensions, and determine slope roughness. Performed stereonet analysis of potential failure kinematics. Collected rock specimens and measured rock unit weight. Prepared memorandum summarizing results of the analysis. Explored rockfall remediation options and provided recommendations for excavation of a portion of the slope face having an unfavorable orientation.

S.R. 0015, Section 116 (U.S. Highway 15) Rock Cut Slope Design, Lycoming County, PA, *PennDOT, District 3-0.* Senior Project Geologist responsible for developing rock cut slope recommendations for a project to reduce future maintenance along a curved portion of highway experiencing occasional rockfalls. Project objectives were to modify the existing cut and provide a rock catchment ditch to prevent rocks from landing on the roadway. Conducted site reconnaissance; developed a plan for taking digital images to be used by digital photogrammetry software to create a digital terrain model, which was used to measure 238 rock discontinuities. Used a Brunton Geotransit to collect an additional 35 measurements to validate the measurements from the digital image model. Assessed variability of bedding and jointing along the alignment and performed stereonet analyses to evaluate kinematic potential for planar, toppling, and wedge failures along the rock slope. Used Ritchie ditch to size the rockfall catchment ditch and used the Colorado Rockfall Simulation Program to assess performance of the proposed ditch. Used a digital model to locate outcrop of clay seams encountered in the test borings. Calculated the factor of safety for plane failure along clay seams based on drained, partially drained, and undrained conditions. Developed cut slope recommendations; prepared structure contour maps of clay seams used to lay out drain holes; and used the vector dot product approach to optimize drain hole orientation. Provided consultation during construction. This project received the Honor Award in the Surveying and Mapping Technology category in the American Council of Engineering Companies of Pennsylvania 2014 Diamond Awards for Engineering Excellence competition. The Honor Award is the highest honor bestowed upon a project in each category.

Nesbitt Dam Rehabilitation, Lackawanna County, PA, *Pennsylvania American Water.* Project Geologist responsible for performing site reconnaissance and reviewing aerial photographs to identify possible landslide features during the design phase. Prepared a technical memorandum with findings. Reviewed and summarized published geologic literature for a design report. Installed transducers and dataloggers in piezometers at completion of dam rehabilitation.

Barbara Weedon, PWS

Environmental Manager

Summary of Qualifications and Experience

As the Environmental Manager, Barbara Weedon, PWS will oversee the execution of environmental-related tasks. A Senior Environmental Scientist, she coordinates and prepares environmental studies and documentation in compliance with the National Environmental Policy Act (NEPA) including environmental assessments and impact statements, and categorical exclusion evaluations (CEE). Her specialties include Section 4(f) evaluations, aquatic resource identification and delineation, threatened and endangered species coordination and surveys in accordance with state and federal guidelines, land use, agricultural studies and documentation, as well as public involvement coordination. Firm understanding of the Federal Clean Water Act 404 Guidance; and the National Pollutant Discharge Elimination System (NPDES) permit as it applies to transportation.

Relevant Work Experience

Engineering and Environmental Open-End, S.R. 0414, Section 69 Slide, Bradford County, PA, *PennDOT, District 3-0.* Senior Environmental Specialist for the repair design of a landslide causing a shift and failure of S.R. 0414. Responsible for initial coordination and preparation of the Scoping Document for preliminary design.

S.R. 0906, Section A10, Landslide Repair, Washington Township, Fayette County, PA, *PennDOT, District 12.* Senior Environmental Specialist for a multiphase, open-end design contract for slide and embankment repair with possible vertical and horizontal roadway realignment along 3,000 LF of two-lane roadway. The existing roadway traverses the hillside adjacent to the Monongahela River and is subject to roadway displacements below and rockfall events from the hillside above. The preliminary design study will evaluate alignment options to minimize geotechnical hazards. Preliminary engineering under an initial work order included roadway design, geotechnical investigations, environmental studies, agency coordination, and other engineering required to secure environmental clearance and design field view approval. Responsibilities include preparation of the scoping document on behalf of the Department and the completion of the CEE; management of environmental tasks such as wetland and waterway identification and delineation needs and cultural resource investigations; coordination and scheduling of the public involvement meeting; and providing recommendations with regards to the Chapter 105/Section 404 permit requirements.

S.R. 0120, Shintown Slide, Noyes Township, Clinton County, PA, *PennDOT, District 2-0.* Senior Environmental Specialist conducting an identification survey of vegetation within the Shintown Slide project study limits for two endangered species and one species of concern. Neither of the two listed endangered species (Chenopogium foggii and Helianthemum bicknellii)

24 Years of Experience

Years of Experience with Gannett Fleming: 3

Professional Registrations:

Professional Wetland Scientist (PWS)

Education:

BS, Biological Sciences, Shippensburg University, 1991

MS, Biological Sciences, Community Ecology Emphasis, Shippensburg University, 1994

Professional Affiliations:

Pennsylvania Association of Environmental Professionals

Society of Wetland Scientists

were identified; however, the species of concern (Penstemon laevigatus) was identified within the project limits. Incorporated measures to avoid impacts to the population into the project plans. Prepared and submitted a Pennsylvania Department of Conservation and Natural Resources (DCNR) Botanical Field Survey form for the project, which was cleared to the satisfaction of both the District and DCNR.

Brush Creek Dam No. 15, West Virginia Dam Rehabilitation Program, Mercer and Mineral Counties, WV, *West Virginia Conservation Agency.* Senior Environmental Specialist for project involving the preparation of the Environmental Assessment for the rehabilitation of the existing Brush Creek Dam No. 15 emergency spillway. Responsibilities included participation in the preparation of the environmental assessment, focusing on the cultural resource analysis, air analysis, and climate analysis.

Districtwide Bridge Replacement Services, South Central PA, *PennDOT, District 8-0.* As Senior Environmental Specialist, provided environmental support services to the District 8-0 staff for more than 10 years. Support services included the following: reviewing all NEPA scoping and evaluation environmental documents prior to review by the District Environmental Manager to speed the process by providing initial review comments to team members; reviewing the "let schedule" for the approximately 380 ongoing district projects and coordinating with the District Design Engineer and the Assistant District Engineer regarding project status, projects of concern, and projects that needed "let dates" moved up or out in the calendar year; performing field views for the purpose of identifying natural resources and potential permitting requirements under Chapter 105/Section 404; conducting project field views with individual staff members to provide training for the identification of jurisdictional palustrine wetlands and stream channels, as well as potential threatened and endangered species habitat; attending project-scoping field views as a representative of the District environmental staff; providing environmental support services to District Maintenance Unit, as well as District County Maintenance field offices; coordinating with County Manager and Assistant Managers on project specific needs for threatened and endangered species clearance, wetland identification/delineation, permitting requirements, and agency coordination; performing in field views with County Maintenance and Maintenance Unit personnel; reviewing various reports such as wetland identification and delineation reports, Phase I environmental site assessments, Section 4(f) checklists, Phase I Bog Turtle Survey reports, Botanical Field Survey forms prepared for submission to the Pennsylvania Department of Natural Resources, mitigation monitoring reports, CEEs, and Scoping Field View forms; developing and jointly conducting training with the District Environmental Manager for both the District project managers and consulting community on preparing CE/EA and the nuances in the form that can cause a rejection from PennDOT's Central Office; and preparing a training/guidance document for District project managers to assist in streamline delivery of projects. The District Design Engineer requested guidance be provided from all District Units for the document. Tasked with spearheading the outline and final preparation of the document to be presented in a training presentation by the District Units. Also provided the final document for duplication and supplied it to all existing and incoming project managers.

Christopher Vollmer, PE, PMP

Structural Engineer

Summary of Qualifications and Experience

Mr. Christopher Vollmer, PE, PMP will use his extensive structural experience, including 10 landslide projects to help ensure structurally-sound solutions for this project. His experience includes preparing structural design and plan preparation for local, state, and federal clients. Chris has overseen and performed detailed design preparation on more than 50 projects.

Relevant Work Experience

S.R. 0030, Section A36, Emergency Landslide Remediation along S.R. 0030, Geotechnical, Design, and Environmental Services, Allegheny County, PA, *PennDOT.* Lead Structural Engineer for the emergency landslide repairs to reconstruct S.R. 0030. Approximately 200 feet of the heavily traveled roadway (20,000 average daily traffic (ADT) slide as a result of the landslide from the supporting embankment. The resulting remediation included the design of a 400-foot-long anchored soldier pile and lagging wall constructed at the base of the slope to support a new rock embankment and reconstructed S.R. 0030. Due to the impacts to traffic and the adjacent properties; our firm was tasked with developing a plans, specifications, and estimates (PS&E) package within an accelerated schedule. As a result, our firm completed the design package for bid in only 10 days.

Engineering and Geotechnical Open-End Services, Allegheny, Beaver, and Lawrence Counties, PA, *PennDOT, District 11-0.* Senior Project Manager serving as the Bridge Task Manager for the final design of concurrent work-order assignments encompassing various aspects of transportation, geotechnical, and structural issues. Responsibilities include scoping structural activities, coordinating with the District, assigning resources, and tracking schedules and budget. Specific assignments include:

- **S.R. 2110, Section A07, William Penn Highway Landslide Remediation, Allegheny County.** Development of a conceptual type, size, and location (TS&L) report and design-build specifications for a 228-foot-long retaining wall landslide remediation. The structural solution consisted of an anchored soldier pile and lagging wall with a design height of approximately 30 feet.
- **S.R. 4063, Pearce Mill Road Landslide Remediation, Allegheny County.** Development of the design and details for a landslide remediation consisting of 54-inch-diameter reinforced tangent caissons with a depth of approximately 60 feet.

21 Years of Experience

Years of Experience with Gannett Fleming: 20

Professional Registrations:

PE: PA, DOC, OH, MD, VA

Project Management Professional: Project Management Institute

Education:

BS, Civil Engineering, Youngstown State University, 1997

Professional Affiliations:

American Institute of Steel Construction

Project Management Institute

S.R. 2001, Section A18, Emergency Landslide Remediation along Bunola River Road, Geotechnical, Design, and Environmental Services, Forward Township, Allegheny County, PA, *PennDOT.* Lead Structural Engineer for emergency landslide repairs of 500 feet of two-lane roadway and additional drainage improvement over an additional 750 feet of roadway. A portion of a retaining wall supporting the northbound roadway had failed, causing complete failure and up to 10 feet of vertical displacement of the roadway, resulting in complete closure of the roadway. The wall failure caused the soil below the failed area to move downslope toward an active railroad corridor along the Monongahela River Valley. The project received an Emergency Authorization from the Secretary of Transportation to perform repairs as quickly as possible. The resulting improvement included the design and construction of a 504-foot-long soldier pile and lagging wall, which included the use of rock anchors for the tallest portions of the structure. Our firm performed geotechnical analysis and design; and prepared a geotechnical engineering report; erosion and sedimentation plans; final maintenance and protection of traffic plans; final roadway plans; final structure plans; and the plans, specifications, and estimates (PS&E) package within 90 days of the authorization to proceed.

Preliminary Engineering Services and Construction Consultation - Slide Projects, S.R. 0006, Section SLD, Wyoming County, PA, *PennDOT, District 4-0.* Structural Project Engineer for the final design and plan preparation of design-build-bid documents for the 300-foot-long landslide remediation. The remediation included an H-pile wall with sheet pile lagging for a design height of approximately 20 feet.

Structural Design Services for Retaining Walls, Allegheny County, PA, *Allegheny County.* Structural Engineer for the final design of two retaining walls as part of a bridge replacement project. Gannett Fleming was the design-build subconsultant to the prime contractor charged with developing retaining wall configurations to meet the owner's contract specification requirements. Significant geotechnical constraints were present due to adverse geologic conditions, including poor quality soil and rock in a landslide-susceptible area, and stringent design limitations in the contract specifications. Ultimately, a concrete cantilevered retaining wall supported by two rows of caissons socketed into bedrock was designed and constructed for Wall 2. Wall 1 includes a cast-in-place, reinforced-concrete cantilevered structure, supported axially by caissons and laterally by multiple rows of rock anchors. The wall was designed and constructed using bottom-up principles.

S.R. 0837, Section 21R, Landslide Remediation, Washington County, PA, *PennDOT, District 12-0.* Structural Project Designer responsible for the conceptual design and type, size, and location (TS&L) plan preparation of a retaining wall system to stabilize S.R. 0837. Preliminary retaining wall systems that were considered included an anchored soldier pile lagging wall and an anchored tangent caisson wall.

2. References

S.R. 0030, A36 Emergency Landslide Repair

S.R. 2001 Bunola River Road Landslide Repair

Geotechnical Open-End Agreement E03559, Geotechnical Reviews

Jonathan Moses, PE
Pennsylvania Department of Transportation, District 11-0
412-429-4897

Evans Well Landslide Remediation
Brian Jarvis
Hydrocarbon Well Services, Inc.
304-472-9600

Landslide Remediation and Other Geotechnical Engineering Services
Dave Sicker, PE
Muskingum Watershed Conservancy District
231-801-7022

3. Staff Certifications and Degrees

Copies of our team's certifications and licenses are provided on the following pages. Degrees are presented in the table below.

Name	Role	Degree(s)
Mitchell Weber, PG	Project Manager	• BS, Geology, Mount Union College, 1982 • MS, Geology, Kent State University, 1985
John Kovacs, PE, PMP, DGE	Project Principal	• BS, Civil Engineering, Carnegie Mellon University, 1993 • MS, Civil and Environmental Engineering, The University of Pittsburgh, 1996 • MBA, The University of Pittsburgh Katz Graduate School of Business, 1999
Terry Downs, PG	Quality Assurance/Quality Control	• BS, Geology, University of Pittsburgh, 1983 • MS, Civil Engineering, University of Maryland, 1994
Paula Loht, CSP, CIH	Safety (HASPs)	• BA, Chemistry, Shippensburg University, 1984
Sarah Huffman	Contract Administration/Clerical	• BA/ Finance/Florida Atlantic University/2003 • MEd/Elementary Education/University of Pittsburgh/2008
Matthew Morris, PG	Geotechnical Project Manager	• BS, Geology, Clarion University of Pennsylvania, 1997 • MS, Engineering Geology, Kent State University, 2004
Stephanie Chechak, PE	Geotechnical Engineer	• BS, Civil Engineering, University of Pittsburgh, 2008 • MS, Civil Engineering, University of Pittsburgh, 2014

Name	Role	Degree(s)
Erik Schuller, PE	Geotechnical Engineer	• BS, Civil Engineering, University of Pittsburgh, 2011 • MS, Civil Engineering, University of Pittsburgh, 2015
William Roman, PG	Geologist	BA, Geology and French, Beloit College, 1986
Andrew Smithmyer, PG	Geologist	• BS, Geology, Juniata College, 1998 • MS, Engineering Geology, Kent State University, 2001
Paul Hale, PG, LRS	Drilling Services	• B.S., Environmental Geoscience, Indiana University of Pennsylvania, 1994 • M.S., Geology, Kent State University, 1999
Richard Lee, PG, RGP	Geophysical Investigations	• BS, Geology, Colgate University, 1977 • MS, Geology, University of Pittsburgh, 1979
Robert Sciullo, PE	Constructibility Reviews	BS, Civil Engineering, University of Pittsburgh, 1983
Barbara Weedon, PWS	Environmental Manager	• BS, Biological Sciences, Shippensburg University, 1991 • MS, Biological Sciences, Shippensburg University, 1994
Cyrille Whitson, CWD	Wetlands	• BS, Biological Sciences, Albright College, 1983 • MS, Watershed Science and Hydrology, Utah State University, 1986
Robert Scrafford, PE, ENV SP	Stream Restoration Design	• BS, Environmental Studies, Bucknell University, 1997 • MS, Environmental Sciences and Policy, Johns Hopkins University, 2003
Deborah Sappie	Erosion and Sedimentation Control	• BS, Civil Engineering Technology, Point Park College, 1986
Robert Dengler, PE	Drainage Design	• BS, Civil Engineering, Drexel University, 1995 • MS, Civil Engineering, University of Pittsburgh, 2003
Christopher Vollmer, PE, PMP	Structural Engineer	• BS, Civil Engineering, Youngstown State University, 1997
Christopher Krebs, PE, CFM, GISP	UAV Mapping Services	• BS, Civil Engineering, The Pennsylvania State University, 1992

BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS

P. O. Box 2649

Harrisburg, PA 17105-2649

09/07/2018

License Information

MITCHELL W WEBER

Akron, Ohio 44333

Board/Commission:	State Registration Board for Professional Engineers, Land Surveyors and Geologists	Status Effective Date:	05/15/2001
LicenseType:	Professional Geologist	Issue Date:	11/16/1993
Specialty Type:		Expiration Date:	09/30/2019
License Number:	[redacted]	Last Renewal:	09/06/2017
Status:	Active		

Disciplinary Action Details

No disciplinary actions were found for this license.

This site is considered a primary source for verification of license credentials provided by the Pennsylvania Department of State.

West Virginia State Board of Registration for Professional Engineers

Licensure Verification

Search: Details

Name:	JOHN W KOVACS
WV Professional Engineer:	PE License Number: [redacted]
	PE License Status: Active
	PE Issue Date: 10/02/2007
	PE Expiration Date: 12/31/2018
WV Engineer Intern:	EI Certification Number:
	EI Issue Date:
Primary Address of Record:	FOSTER PLAZA 8, SUITE 400 730 HOLIDAY DRIVE PITTSBURGH, PA 15220
Primary Employer of Record:	GANNETT FLEMING, INC. FOSTER PLAZA 8, SUITE 400 730 HOLIDAY DRIVE PITTSBURGH, PA 15220

This data was retrieved on 6/5/2017.

West Virginia State Board of Registration for Professional Engineers
300 Capitol Street - Suite 910, Charleston, West Virginia 25301
(304) 558-3554 | info@wvpebd.org

BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS
P. O. Box 2649
Harrisburg, PA 17105-2649
09/07/2018

License Information

JOHN WILLIAM KOVACS

Pittsburgh, Pennsylvania 15241

Board/Commission:	State Registration Board for Professional Engineers, Land Surveyors and Geologists	Status Effective Date:	09/14/2007
LicenseType:	Professional Engineer	Issue Date:	08/11/1997
Specialty Type:		Expiration Date:	09/30/2019
License Number:	[redacted]	Last Renewal:	08/16/2017
Status:	Active		

Disciplinary Action Details

No disciplinary actions were found for this license.

This site is considered a primary source for verification of license credentials provided by the Pennsylvania Department of State.

PMI Online Credential Registry

Search for Active and Retired credential holders by typing search criteria. Remember, some credential holders opt out of inclusion on the Credential Registry, and will not display.

Last Name:* kovacs
First Name: john
Country: United States
Credential: PMP

Search

* indicates a required field

Name	City	Country	Credential	Earned	Status
John W. Kovacs	Pittsburgh, PA	United States	PMP	12 Aug 2002	Active

John W. Kovacs

Professional Engineer [redacted] Current
Expires: 06/30/2019

This is to certify that the person identified above has met the requirements of the law, is duly licensed and is entitled to practice as indicated in the Commonwealth of Kentucky until this license expires

Secretary-Treasurer

STATE OF MICHIGAN
DEPARTMENT OF LICENSING
AND REGULATORY AFFAIRS
P.O. BOX 30670
LANSING, MI 48909

M621017 001 R -0025

Please tell us about your licensing experience by completing our anonymous customer survey at:
www.michigan.gov/larasurvey

STATE OF MICHIGAN-DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
BUREAU OF PROFESSIONAL LICENSING
PROFESSIONAL ENGINEER
LICENSE

JOHN KOVACS

LICENSE NO.	EXPIRATION DATE	AUDIT NO
[redacted]	10/31/2018	3125608

JOHN KOVACS
[redacted]

Complaint Information
The issuance of this license or permit should not be construed as a waiver or dismissal of any complaints or violations pending against the licensee, its agents, employees or qualifying officer.

Inquiries Regarding this License
Please provide your license number on all correspondence, and when contacting the Department.

www.michigan.gov/bpl

Bureau of Professional Licensing
Department of Licensing and Regulatory Affairs
P.O. Box 30670
Lansing, MI 48909

(517) 373-8068

RICK SNYDER
GOVERNOR

STATE OF MICHIGAN M520351
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
BUREAU OF PROFESSIONAL LICENSING

PROFESSIONAL ENGINEER
LICENSE

JOHN KOVACS

LICENSE NO.	EXPIRATION DATE	AUDIT NO	
[redacted]	10/31/2018	3125608	THIS DOCUMENT IS DULY ISSUED UNDER THE LAWS OF THE STATE OF MICHIGAN

DISPLAY THIS CERTIFICATE PROMINENTLY • NOTIFY AGENCY WITHIN 10 DAYS OF ANY CHANGE

Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
PO BOX 2649 Harrisburg PA 17105-2649

18 0124891

License Type
Professional Geologist

TERRY L DOWNS
[redacted]

License Status
Active

Initial License Date
04/11/1996

Expiration Date
09/30/2019

License Number
[redacted]

Commissioner of Professional and Occupational Affairs

Signature

ALTERATION OF THIS DOCUMENT IS A CRIMINAL OFFENSE UNDER 18 PA.C.S.S. 4911

DISPLAY THIS CERTIFICATE PROMINENTLY • NOTIFY AGENCY WITHIN 10 DAYS OF ANY CHANGE

Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
PO BOX 2649 Harrisburg PA 17105-2649

18 0069119

License Type
Professional Geologist

MATTHEW BROOKS MORRIS
[redacted]

License Status
Active

Initial License Date
04/28/2005

Expiration Date
09/30/2019

License Number
[redacted]

Commissioner of Professional and Occupational Affairs

Signature

ALTERATION OF THIS DOCUMENT IS A CRIMINAL OFFENSE UNDER 18 PA.C.S.A. 4911

The University of the State of New York
Education Department
Office of the Professions
REGISTRATION CERTIFICATE
Do not accept a copy of this certificate

License Number: 000020-1 Certificate Number: [redacted]

ROMAN WILLIAM MILLSAP
[redacted]

is registered to practice in New York State through 12/31/2019 as a(n)
PROFESSIONAL GEOLOGIST

LICENSEE/REGISTRANT

EXECUTIVE SECRETARY

COMMISSIONER OF EDUCATION

DEPUTY COMMISSIONER
FOR THE PROFESSIONS

This document is valid only if it has not expired, name and address are correct, it has not been tampered with and is an original - not a copy. To verify that this registration certificate is valid or for more information please visit www.op.nysed.gov.

Commonwealth of Pennsylvania Department of State
Bureau of Professional and Occupational Affairs

Professional Geologist

License Number [redacted]

Expiration Date
09/30/2019

Active

WILLIAM M ROMAN
[redacted]

OFFICIAL DOCUMENT

READ THE FOLLOWING INFORMATION CAREFULLY CONCERNING YOUR LICENSE

1 SIGN THE WALLET CARD AND CERTIFICATE WHERE INDICATED
2 DETACH THE WALLET CARD AND CERTIFICATE AT PERFORATION

Pennsylvania Licensing System (PALS)

WILLIAM M ROMAN
[redacted]

Visit our website at: www.pals.pa.gov to renew your license, change your personal or license address, or order duplicate licenses.

DISPLAY THIS CERTIFICATE PROMINENTLY • NOTIFY AGENCY WITHIN 10 DAYS OF ANY CHANGE

Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
PO BOX 2649 Harrisburg PA 17105-2649

18 0058409

License Type
Professional Geologist

WILLIAM M ROMAN
[redacted]

License Status
Active

Initial License Date
05/13/1994

Expiration Date
09/30/2019

License Number
[redacted]

Commissioner of Professional and Occupational Affairs

William M. Roman
Signature

State of Tennessee

11118567

TENNESSEE BOARD OF PROFESSIONAL GEOLOGISTS

LICENSED PROFESSIONAL GEOLOGIST

WILLIAM MILLSAP ROMAN

This is to certify that all requirements of the State of Tennessee have been met.

ID NUMBER: [redacted]
LIC STATUS: ACTIVE
EXPIRATION DATE: August 27, 2020

IN-1313
DEPARTMENT OF
COMMERCE AND INSURANCE

EXPIRES: 07/31/2020

NO. [redacted]

The State of Wisconsin
Department of Safety and Professional Services

EXAMINING BOARD OF PROFESSIONAL GEOLOGISTS, HYDROLOGISTS AND SOIL SCIENTISTS

Hereby certifies that

WILLIAM M ROMAN

was granted a certificate of registration as a

PROFESSIONAL GEOLOGIST

in the State of Wisconsin in accordance with Wisconsin Law
on the 7th day of February in the year 1996.

The authority granted herein must be renewed each biennium by the granting authority.

In witness thereof, the State of Wisconsin
Examining Board of Professional Geologists, Hydrologists and Soil Scientists
has caused this certificate to be issued under
the seal of the Department of Safety and Professional Services

STATE OF WISCONSIN
DEPT. OF SAFETY AND PROFESSIONAL SERVICES

Laura E. Gutierrez
DSPS Secretary

William M. Mode
Chairperson

Amy E. Bidson
Secretary

This certificate was printed on the 15th day of June in the year 2018

Society of Wetland Scientists
Professional Certification Program, Inc.

renews the designation

Professional Wetland Scientist

For

Barbara Woleslagle Weedon

In recognition of all the professional requirements approved by the Society of Wetland Scientists Certification Renewal Program, and verified by the Society's Certification Renewal Review Panel. Professional Wetland Scientist Number **1619** issued on **1/26/2006** and recertified on **1/11/2016.** Due to recertify again by **1/26/2021**

Robbyn Myers, PWS
President

Pat Frost, PWS
Certification Renewal Chair

07/11/2018 5,211,978

STATE BOARD FOR PROFESSIONAL ENGINEERS

23 05 52925 CHRISTOPHER T. VOLLMER 6010 07-10-2018

MESSAGE(S):

JUST A REMINDER. EFFECTIVE 1/15/2018 THE NUMBER OF REQUIRED PDH'S HAS BEEN REDUCED FROM 24 TO 16. ALSO THERE IS NO CATEGORY A OR B.
TECHNICAL, RESEARCH, ANALYTICAL, OR DESIGN ASPECTS OF ENGINEERING;
LAWS AND REGULATIONS APPLICABLE TO THE PRACTICE OF ENGINEERING IN MARYLAND;
ENGINEERING-RELATED COMPUTER HARDWARE AND SOFTWARE TOPICS;
STANDARDS OF PRACTICE OR CARE;
PROFESSIONAL ENGINEERING ETHICS;
PROJECT MANAGEMENT, RISK ASSESSMENT AND MANAGEMENT, OR EMERGENCY AMD DISASTER MANAGEMENT; OR
SIMILAR TOPICS AIMED TO MAINTAIN, IMPROVE, OR EXPAND THE SKILLS AND KNOWLEDGE RELEVANT TO THE LICENSEES FIELD OF PRACTICE.
A MINIMUM OF 1 PDH IN EACH BIENNIAL LICENSING TERM SHALL BE EARNED FROM THE PARTICIPATION IN THE COMPLETION OF QUALIFYING PROGRAMS WITH CONTENT RELATED TO THE FOLLOWING: ETHICAL CONCERNS AND CONFLICTS RELATED TO ENGINEERING FAMILIARITY WITH CODE OF CONDUCT, STANDARDS OF PRACTICE OR MARYLAND LAW

STATE OF MARYLAND DLLR
DEPARTMENT OF LABOR, LICENSING AND REGULATION

LICENSE * REGISTRATION * CERTIFICATION * PERMIT

Lawrence J. Hogan, Jr. Governor
Boyd K. Rutherford Lt. Governor
Kelly M. Schulz Secretary

STATE OF MARYLAND

DEPARTMENT OF LABOR, LICENSING AND REGULATION

STATE BOARD FOR PROFESSIONAL ENGINEERS

CERTIFIES THAT:

CHRISTOPHER T. VOLLMER

IS AN AUTHORIZED: 05 - PROFESSIONAL ENGINEER

LIC/REG/CERT	EXPIRATION	EFFECTIVE	CONTROL NO
[redacted]	07-10-2020	N/A	5211978

Signature of Bearer

Kelly M. Schulz
Secretary DLLR

WHERE REQUIRED BY LAW THIS MUST BE CONSPICUOUSLY DISPLAYED IN OFFICE TO WHICH IT APPLIES

---

23 05 52925 5,211,978

23 05 52925

STATE BOARD FOR PROFESSIONAL ENGINEERS
500 N. CALVERT STREET
BALTIMORE, MD 21202-3651

CHRISTOPHER T. VOLLMER
[redacted]

STATE OF MARYLAND DLLR
LICENSE * REGISTRATION * CERTIFICATION * PERMIT
STATE OF MARYLAND
Lawrence J. Hogan, Jr.
Boyd K. Rutherford
Kelly M. Schulz

STATE BOARD FOR PROFESSIONAL ENGINEERS
CERTIFIES THAT:
CHRISTOPHER T. VOLLMER
IS AN AUTHORIZED: 05 - PROFESSIONAL ENGINEER

LIC/REG/CERT	EXPIRATION	EFFECTIVE	CONTROL NO
[redacted]	07-10-2020	N/A	5211978

Signature of Bearer
Secretary DLLR

State of Ohio
State Board of Registration for
Professional Engineers and Surveyors
77 S. High Street, Suite 2472
Columbus, Ohio 43215

Christopher T. Vollmer
114 Sundial Drive
Canonsburg PA 15317

For information regarding seals visit
the Board's Website at peps.ohio.gov

State of Ohio
State Board of Registration for
Professional Engineers and Surveyors
2018-2019
Professional Engineer
Christopher T. Vollmer
PE . 81 99 Expiration Date: 12/31/2019
BOARD CHAIRMAN EXECUTIVE DIRECTOR

DISPLAY THIS CERTIFICATE PROMINENTLY • NOTIFY AGENCY WITHIN 10 DAYS OF ANY CHANGE

Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
PO BOX 2649 Harrisburg PA 17105-2649

18 0133629

License Type
Professional Engineer

CHRISTOPHER THOMAS VOLLMER
114 SUNDIAL DR
Canonsburg PA 15317

License Status
Active

Initial License Date
06/20/2002

Expiration Date
09/30/2019

License Number
PE061113

Commissioner of Professional and Occupational Affairs

Signature

ALTERATION OF THIS DOCUMENT IS A CRIMINAL OFFENSE UNDER 18 PA.C.S. 4911

Project Management Institute

THIS IS TO CERTIFY THAT

Christopher T Vollmer

HAS BEEN FORMALLY EVALUATED FOR DEMONSTRATED EXPERIENCE, KNOWLEDGE AND PERFORMANCE IN ACHIEVING AN ORGANIZATIONAL OBJECTIVE THROUGH DEFINING AND OVERSEEING PROJECTS AND RESOURCES AND IS HEREBY BESTOWED THE GLOBAL CREDENTIAL

Project Management Professional (PMP)®

IN TESTIMONY WHEREOF, WE HAVE SUBSCRIBED OUR SIGNATURES UNDER THE SEAL OF THE INSTITUTE

Antonio Nieto-Rodriguez • Chair, Board of Directors

Mark A. Langley • President and Chief Executive Officer

PROJECT MANAGEMENT INSTITUTE CORPORATE SEAL 1969 PENNSYLVANIA

PMP® Number [redacted]

PMP® Original Grant Date 13 October 2006

PMP® Expiration Date 12 October 2019

PMI Project Management Institute

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
07-31-2020

NUMBER
[redacted]

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE

CHRISTOPHER THOMAS VOLLMER
[redacted]

Status can be verified at http://www.dpor.virginia.gov

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)
(DETACH HERE)

COMMONWEALTH of VIRGINIA
Department of Professional and Occupational Regulation

BOARD FOR APELSCIDLA
PROFESSIONAL ENGINEER LICENSE
NUMBER: [redacted] EXPIRES: 07-31-2020

CHRISTOPHER THOMAS VOLLMER
[redacted]

(FOLD)

Status can be verified at http://www.dpor.virginia.gov

DPOR-LIC (02/2017)

ABIH

american board of industrial hygiene®

organized to improve the practice of industrial hygiene
proclaims that

Paula J. Loht

having met all requirements of
education, experience and examination, and
ongoing maintenance,
is hereby certified in the

COMPREHENSIVE PRACTICE
of
INDUSTRIAL HYGIENE

and has the right to use the designations

CERTIFIED INDUSTRIAL HYGIENIST

CIH

Certificate Number [redacted]

Awarded: November 24, 1993

Expiration Date: June 1, 2020

Nicole Greeson
Chair, ABIH

Chief Executive Officer, ABIH

Board of Certified Safety Professionals

Upon the recommendation of the
Board of Certified Safety Professionals,
by virtue of the authority vested in it,
has conferred on

Paula J Loht

the credential of

Certified Safety Professional

and has granted the title as evidence of meeting the qualifications and passing the required examination so long as this credential is not suspended or revoked and is renewed annually and meets all recertification requirements.

CSP®

BOARD OF CERTIFIED SAFETY PROFESSIONALS

October 11, 2013
DATE ISSUED

[redacted]
CERTIFICATION NUMBER

BOARD PRESIDENT SIGNATURE

BOARD SECRETARY SIGNATURE

DISPLAY THIS CERTIFICATE PROMINENTLY • NOTIFY AGENCY WITHIN 10 DAYS OF ANY CHANGE

Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
PO BOX 2649 Harrisburg PA 17105-2649

18 0256443

License Type
Professional Engineer

STEPHANIE MARIE CHECHAK
[redacted]

License Status
Active

Initial License Date
12/19/2017

Expiration Date
09/30/2019

License Number
[redacted]

Commissioner of Professional and Occupational Affairs

Stephanie Marie Chechak
Signature

ALTERATION OF THIS DOCUMENT IS A CRIMINAL OFFENSE UNDER 18 PA.C.S.A. 4911

State of Ohio
State Board of Registration for
Professional Engineers and Surveyors
77 S. High Street, Suite 2472
Columbus, Ohio 43215

For information regarding seals visit
the Board's Website at peps.ohio.gov

State of Ohio
State Board of Registration for
Professional Engineers and Surveyors
2018 – 2019
Professional Engineer
Erik Schuller
[redacted]
Expiration Date: 12/31/2019

Erik Schuller
[redacted]

BOARD CHAIRMAN

EXECUTIVE DIRECTOR

DISPLAY THIS CERTIFICATE PROMINENTLY • NOTIFY AGENCY WITHIN 10 DAYS OF ANY CHANGE

Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
PO BOX 2649 Harrisburg PA 17105-2649

18 0071444

License Type
Professional Geologist

ANDREW JAMES SMITHMYER
[redacted]

License Status
Active

Initial License Date
12/10/2004

Expiration Date
09/30/2019

License Number
[redacted]

Commissioner of Professional and Occupational Affairs

Andrew James Smithmyer
Signature

ALTERATION OF THIS DOCUMENT IS A CRIMINAL OFFENSE UNDER 18 PA.C.S.S. 4911

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
08-31-2019

NUMBER
[redacted]

BOARD FOR PROFESSIONAL SOIL SCIENTISTS, WETLAND PROFESSIONALS & GEOLOGISTS
CERTIFIED PROFESSIONAL GEOLOGIST

ANDREW JAMES SMITHMYER
[redacted]

Status can be verified at http://www.dpor.virginia.gov

Jay W. Dalton, Director

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)

(DETACH HERE)

COMMONWEALTH of VIRGINIA
Department of Professional and Occupational Regulation

BOARD FOR PROFESSIONAL SOIL SCIENTISTS, WETLAND PROFESSIONALS & GEOLOGISTS
CERTIFIED PROFESSIONAL GEOLOGIST
NUMBER: [redacted] EXPIRES: 08-31-2019

ANDREW JAMES SMITHMYER
[redacted]

Status can be verified at http://www.dpor.virginia.gov

DPOR-PC (02/2017)

BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS
P. O. Box 2649
Harrisburg, PA 17105-2649
09/07/2018

License Information

PAUL ALLEN HALE

Kittanning, Pennsylvania 16201

Board/Commission:	State Registration Board for Professional Engineers, Land Surveyors and Geologists	Status Effective Date:	10/02/2007
LicenseType:	Professional Geologist	Issue Date:	12/23/2002
Specialty Type:		Expiration Date:	09/30/2019
License Number:	[redacted]	Last Renewal:	08/30/2017
Status:	Active		

Disciplinary Action Details

No disciplinary actions were found for this license.

This site is considered a primary source for verification of license credentials provided by the Pennsylvania Department of State.

License Search for Professional Engineers and Land Surveyors

Licensee Name: LEE RICHARD KENNETH
License Type: GEOPHYSICIST
License Number: [redacted]
License Status: CLEAR Definition
Expiration Date: October 31, 2019

BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS

P. O. Box 2649

Harrisburg, PA 17105-2649

09/07/2018

License Information

RICHARD KENNETH LEE

[redacted]

Board/Commission:	State Registration Board for Professional Engineers, Land Surveyors and Geologists	Status Effective Date:	
LicenseType:	Professional Geologist	Issue Date:	01/05/1994
Specialty Type:		Expiration Date:	09/30/2019
License Number:	[redacted]	Last Renewal:	08/17/2017
Status:	Active		

Disciplinary Action Details

No disciplinary actions were found for this license.

This site is considered a primary source for verification of license credentials provided by the Pennsylvania Department of State.

Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
PO Box 2649 Harrisburg PA 17105-2649

18 0165047

License Type

Professional Engineer

License Status

Active

Initial License Date

07/24/1989

ROBERT MICHAEL SCIULLO

[redacted]

License Number

[redacted]

Expiration Date

09/30/2019

Commissioner of Professional and Occupational Affairs

Signature

ALTERATION OF THIS DOCUMENT IS A CRIMINAL OFFENSE UNDER 18 PA.C.S.A. 4911

Commonwealth of Virginia

BOARD FOR PROFESSIONAL SOIL SCIENTISTS AND WETLAND PROFESSIONALS

Let it be known by these presents that

Cyrille R. Whitson, Jr.

has given satisfactory evidence of having the qualifications required by law regulating the practice of Wetland Delineation in this State and is hereby authorized to practice as a

VIRGINIA CERTIFIED PROFESSIONAL WETLAND DELINEATOR

in the Commonwealth of Virginia

ISSUED AT RICHMOND, VA.

June 14, 2006

SECRETARY

No [redacted]

FOR THE BOARD

DAVID L. DAVIS, CHAIR

07/27/2018 5,219,432

STATE BOARD FOR PROFESSIONAL ENGINEERS

23 05 33568 ROBERT W. SCRAFFORD 6026 07-26-2018

MESSAGE(S):

JUST A REMINDER. EFFECTIVE 1/15/2018 THE NUMBER OF REQUIRED PDH'S HAS BEEN REDUCED FROM 24 TO 16. ALSO THERE IS NO CATEGORY A OR B.
TECHNICAL, RESEARCH, ANALYTICAL, OR DESIGN ASPECTS OF ENGINEERING;
LAWS AND REGULATIONS APPLICABLE TO THE PRACTICE OF ENGINEERING IN MARYLAND;
ENGINEERING-RELATED COMPUTER HARDWARE AND SOFTWARE TOPICS;
STANDARDS OF PRACTICE OR CARE;
PROFESSIONAL ENGINEERING ETHICS;
PROJECT MANAGEMENT, RISK ASSESSMENT AND MANAGEMENT, OR EMERGENCY AMD DISASTER MANAGEMENT; OR
SIMILAR TOPICS AIMED TO MAINTAIN, IMPROVE, OR EXPAND THE SKILLS AND KNOWLEDGE RELEVANT TO THE LICENSEES FIELD OF PRACTICE.
A MINIMUM OF 1 PDH IN EACH BIENNIAL LICENSING TERM SHALL BE EARNED FROM THE PARTICIPATION IN THE COMPLETION OF QUALIFYING PROGRAMS WITH CONTENT RELATED TO THE FOLLOWING: ETHICAL CONCERNS AND CONFLICTS RELATED TO ENGINEERING FAMILIARITY WITH CODE OF CONDUCT, STANDARDS OF PRACTICE OR MARYLAND LAW

STATE OF MARYLAND DLLR
DEPARTMENT OF LABOR, LICENSING AND REGULATION

LICENSE * REGISTRATION * CERTIFICATION * PERMIT

Lawrence J. Hogan, Jr.
Governor
Boyd K. Rutherford
Lt. Governor
Kelly M. Schulz
Secretary

STATE OF MARYLAND

DEPARTMENT OF LABOR, LICENSING AND REGULATION

STATE BOARD FOR PROFESSIONAL ENGINEERS

CERTIFIES THAT:

ROBERT W. SCRAFFORD

IS AN AUTHORIZED: 05- PROFESSIONAL ENGINEER

LIC/REG/CERT	EXPIRATION	EFFECTIVE	CONTROL NO
[redacted]	09-12-2020	N/A	5219432

Signature of Bearer

Kelly M. Schulz
Secretary DLLR

WHERE REQUIRED BY LAW THIS MUST BE CONSPICUOUSLY DISPLAYED IN OFFICE TO WHICH IT APPLIES

---

23 05 33568 5,219,432

23 05 33568

STATE BOARD FOR PROFESSIONAL ENGINEERS
500 N. CALVERT STREET
BALTIMORE, MD 21202-3651

ROBERT W. SCRAFFORD
[redacted]

STATE OF MARYLAND DLLR
DEPARTMENT OF LABOR, LICENSING AND REGULATION

LICENSE * REGISTRATION * CERTIFICATION * PERMIT
STATE OF MARYLAND
DEPARTMENT OF LABOR, LICENSING AND REGULATION

Lawrence J. Hogan, Jr.
Governor
Boyd K. Rutherford
Lt. Governor
Kelly M. Schulz
Secretary

STATE BOARD FOR PROFESSIONAL ENGINEERS

CERTIFIES THAT:

ROBERT W. SCRAFFORD

IS AN AUTHORIZED: 05 - PROFESSIONAL ENGINEER

LIC/REG/CERT	EXPIRATION	EFFECTIVE	CONTROL NO
[redacted]	09-12-2020	N/A	5219432

Signature of Bearer

Kelly M. Schulz
Secretary DLLR

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
06-30-2020

NUMBER
[redacted]

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE

ROBERT WILLIAM SCRAFFORD
[redacted]

DPOR

Status can be verified at http://www.dpor.virginia.gov

Jay W. DeBoer Director

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)

Commonwealth of Pennsylvania Department of State
Bureau of Professional and Occupational Affairs

Professional Engineer

License Number [redacted]

Expiration Date
09/30/2019

Active

ROBERT WILLIAM DENGLER
[redacted]

OFFICIAL DOCUMENT

READ THE FOLLOWING INFORMATION CAREFULLY CONCERNING YOUR LICENSE

1 SIGN THE WALLET CARD AND CERTIFICATE WHERE INDICATED.
2 DETACH THE WALLET CARD AND CERTIFICATE AT PERFORATION.

ROBERT WILLIAM DENGLER
[redacted]

Pennsylvania Licensing System (PALS)

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DISPLAY THIS CERTIFICATE PROMINENTLY • NOTIFY AGENCY WITHIN 10 DAYS OF ANY CHANGE

Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
PO BOX 2649 Harrisburg PA 17105-2649

18 0062814

License Type
Professional Engineer

ROBERT WILLIAM DENGLER
[redacted]

License Status
Active

Initial License Date
07/18/2001

Expiration Date
09/30/2019

License Number
[redacted]

Commissioner of Professional and Occupational Affairs

Signature

ALTERATION OF THIS DOCUMENT IS A CRIMINAL OFFENSE UNDER 18 PA.C.S.A. 4911

ASSOCIATION OF STATE

FLOODPLAIN MANAGERS, INC.

CERTIFICATION BOARD OF REGENTS

HEREBY CERTIFIES THAT PURSUANT TO THE PROVISIONS OF THE CHARTER FOR THE CERTIFIED FLOODPLAIN MANAGER PROGRAM

Christopher D. Krebs, CFM

IS DULY REGISTERED AS AN

ASFPM CERTIFIED FLOODPLAIN MANAGER

IN TESTIMONY WHEREOF THIS CERTIFICATE HAS BEEN ISSUED BY THE AUTHORITY OF THE CERTIFICATION BOARD OF REGENTS, CERTIFICATE NO. US-01-00306, ISSUED 11/3/2001. THIS CERTIFICATE SHALL EXPIRE 1/31/2020, UNLESS RENEWED ACCORDING TO THE RULES OF THIS BOARD.

CERTIFICATION BOARD OF REGENTS
PRESIDENT, MARK RIEBAU, CFM

ASSOCIATION OF STATE FLOODPLAIN MANAGERS
EXECUTIVE DIRECTOR, CHAD M. BERGINNIS, CFM

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Name	Cert Number	Zipcode	Title	Expiration Date
Cheryl A. Duffy	[redacted]	19701	Senior GIS Specialist	1/25/2020
Chris Badurek		19104	Manager, Research Data Services	7/25/2019
Chris Abbott		17724	GIS Technician	7/26/2019
Christopher Bain		17201	Assistant Engineering Supervisor / GIS Manager	8/25/2019
Christopher Krebs		17011	Vice President, Manager of GIS Services	2/25/2019

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Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
PO BOX 2649 Harrisburg PA 17105-2649

18 0075208

License Type
Professional Engineer

CHRISTOPHER DANIEL KREBS
[redacted]

License Status
Active

Initial License Date
06/15/2016

Expiration Date
09/30/2019

License Number
[redacted]

Commissioner of Professional and Occupational Affairs

Signature

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COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
10-31-2018

NUMBER
[redacted]

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE

CHRISTOPHER DANIEL KREBS
[redacted]

DPOR

Status can be verified at http://www.dpor.virginia.gov

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (05/2015)
(DETACH HERE)

DPOR COMMONWEALTH of VIRGINIA
Department of Professional and Occupational Regulation

BOARD FOR APELSCIDLA
PROFESSIONAL ENGINEER LICENSE
NUMBER: [redacted] EXPIRES: 10-31-2018

CHRISTOPHER DANIEL KREBS
[redacted]

Status can be verified at http://www.dpor.virginia.gov

DPOR-PC (05 2015)

4. Proposed Staffing Plan

West Virginia Department of Environmental Protection

Project Principal
John Kovacs, PE, PMP, DGE*

Quality Assurance/ Quality Control
Terry Downs, PG *

Project Manager
Mitchell Weber, PG *

Contract Admin./Clerical
Sarah Huffman

Safety (HASPs)
Paula Loht, CSP, CIH

Geotechnical Engineering Services

Geotechnical Project Manager
Matthew Morris, PG *

Geotechnical Engineer
Stephanie Chechak, PE
Erik Schuller, PE

Geologist
William Roman, PG *
Andrew Smithmyer, PG

Drilling Services
Paul Hale, PG, LRS (G)

Geophysical Investigations
Richard Lee, PG, RGP

Constructability Reviews
Robert Sciullo, PE

Environmental Services

Environmental Manager
Barbara Weedon, PWS *

Wetlands
Cyrille Whitson, CWD

Stream Restoration Design
Robert Scrafford, PE, ENV SP

Erosion and Sedimentation Control
Deborah Sappie

Other Services

Drainage Design
Robert Dengler, PE

Structural Engineer
Christopher Vollmer, PE, PMP*

UAV Mapping Services
Christopher Krebs, PE, CFM, GISP

LEGEND
(G) = GeoBuild, LLC (an affiliate of Gannett Fleming)
* Key personnel; resume included in Section 1

S.R. 0030, A36 Emergency Landslide Repair, East Pittsburgh and North Braddock, PA

Pennsylvania Department of Transportation (PennDOT), District 11-0

Project Type: Landslide

Project Manager:
Jonathan Moses, PE
PennDOT, District 11-0
412-429-4897

An approximately 100-year-old retaining wall displaced and suddenly collapsed, causing the roadway embankment to slide down into an apartment complex and home. The 30,000 vpd roadway was completely impacted causing a road closure and significantly impacting the traveling public. There were no injuries due to the diligent work of the investigative team to identify significant signs of slope displacement, and an evacuation order of residents deemed to be in immediate danger was issued.

Gannett Fleming and PennDOT worked continuously over a 10-day period to design emergency landslide repairs of 500 feet of this four-lane roadway. We performed core borings; evaluated data; obtained mapping via drone photogrammetry; performed and modified designs as assumptions were validated; and prepared a specification and estimate (PS&E) package for construction of a new anchored wall supporting a benched in rock embankment slope.

Gannett Fleming performed review of contractor submissions and consultation during construction. Submissions include design/build components consisting of roadway and pavement replacement due to inaccessibility of the site during active slide movements. The Gannett Fleming team also provided design services for realignment of impacted utilities and developed final right-of-way plans necessary to compensate the landowners for the impacted private properties and contractor access areas.

"All, I don't even know how to express my gratitude and appreciation for everybody that has worked tirelessly this past week to get us to this point. I am so proud to be part of such an intelligent, hard-working, and extremely conscientious team..... Thanks so much for your efforts and your sacrifices! #TRUETEAMEFFORT!"

- Cheryl Moon-Sirianni, District Engineer, PennDOT, District 11-0

Meeting Project Goals/Objectives: Provide a final design package to repair the landslide and reconstruct the roadway as quickly as possible. Gannett Fleming and PennDOT personnel and contractors work around the clock until roadway was restored, reopening less than 3 months after the collapse.

Project Type: Landslide

Project Manager:
Jonathan Moses, PE
PennDOT, District 11-0
412-429-4897

S.R. 2001 Bunola River Road Landslide Repair, Allegheny County, PA

PennDOT, District 11-0

S.R. 2001, Bunola River Road is subject to landslides and experienced a significant landslide in May 2017 caused the collapse of a retaining wall resulting in the westbound lane to become very unstable. PennDOT closed the road to traffic and issued an Emergency Authorization to perform repairs as quickly as possible.

Gannett Fleming provided investigation and design services including survey, geotechnical investigation and design, roadway design, and right-of-way plans. We reviewed soils, hydrologic and geologic information and provided boring inspection services. Following this review, we evaluated geogrid reinforced soil (GRS) slope and anchored solder pile wall and lagging wall options considering roadway impacts, constructability, right-of-way, site access, environmental requirements, utilities, and cost. Based upon the steep terrain and amount of displacement occurring at the site, PennDOT selected the soldier pile and lagging wall alternative.

Meeting Project Goals/Objectives: To help meet PennDOT's schedule, the Gannett Fleming team prepared a complete landslide remediation plan set for advertisement within 10 weeks of our initial site visit.

Project Type: Landslide

Project Manager:
Shane Szalankiewicz, PE
PennDOT, District 11-0
412-429-5000

S.R. 4070, Section A18, Wildwood Road, Hampton Township, Allegheny County, PA

PennDOT, District 11-0

S.R. 4070 A18 Wildwood Road is a two-lane roadway located in northern Allegheny County. The roadway was constructed in a sidehill cut/fill, with the westbound lane in cut and the eastbound lane in fill. The shoulder of the eastbound lane was failing in three locations within a half mile. Due to the relatively high daily traffic volume on S.R. 4070, the landslide activity and shoulder erosion within the project limits had caused concern for the health, welfare, and safety of the traveling public. Emergency Authorization was granted for this project based on the potential for closure of at least one traffic lane and the increased travel time for emergency vehicles, school buses, and the traveling public.

Gannett Fleming conducted investigations and prepared final plans for this project. We considered a single design alternative for each of the landslide remediation areas. Slides #1 and #2 are less than 200 feet in length and 20 feet or less in height. These were repaired with a soil nail treatment. Slide #3 extends approximately 500 feet in length and has a maximum height of 50 feet to the toe of slope. A stream runs parallel to the toe over the length of the slide. The top has been repaired with a gabion structure which is currently failing. Gannett Fleming proposed to repair this slide by buttressing the toe and reconstructing the upper portion; leaving the densely vegetated midslope portion undisturbed.

Meeting Project Goals/Objectives: Provide a final design package to repair ongoing landslides along the roadway while protecting an adjacent private nature preserve, and minimizing detours. The project footprint was minimized by designing a 0.5H/1V reinforced soil slope bearing on a 1.5H:1V durable rock base, in place of the old unstable roadway embankment. Detours were minimized by limiting the contractor work areas and staging construction operations to accommodate school buses and emergency vehicles, as well as maintaining access for local residents.

S.R. 0376, Section A61 Retaining Wall, Pittsburgh, PA

PennDOT, District 11-0

Project Type: Retaining Wall

Project Manager:
Jarod Grafton, PE
PennDOT, District 11-0
412-429-4897

Gannett Fleming has been retained by PennDOT District 11-0 to provide Preliminary Engineering, Final Design, and Construction Consultation services to remediate two significant reaches of the existing concrete retaining wall supporting S.R. 0376 (Parkway East). The existing wall reflects significant degradation including severe spalling, horizontal cracking, seepage, and general deterioration within these reaches. The first reach supports Sr 376 above 2nd Avenue between the Armstrong Tunnel and the Three Rivers Heritage Trail. The second reach supports SR 376 above the Three Rivers Heritage Trail, approximately ¼ to ½ mile east of the Birmingham Bridge. Gannett Fleming previously developed plans and specifications to successfully stabilize an adjacent reach of the wall through installation of new ground anchors founded into bedrock above the trail.

Preliminary design is underway and consists of the completion of subsurface exploration program to support and development of geotechnical parameters to support evaluation of alternatives to stabilize the wall. A total of thirty (30) thirty test borings and associated laboratory testing were completed in 2017. Preliminary design alternatives under consideration to improve stability of the existing walls include installation of steel members encased in concrete mounted to the front face of the existing wall, and construction of horizontal walers with passive rock anchors located in the top half of the existing wall.

Gannett Fleming has completed the Geotechnical Engineering Report for Preliminary Design. Following the selection of repair alternative by the Department, we will provide final design services. As the project nears final design we will complete a structure foundation report.

Meeting Project Goals/Objectives: The goal is to rehabilitation or replace two retaining walls supporting S.R. 0376 above a local roadway (Second

Avenue) and a public biking trail (Three Rivers Heritage Trail). The retaining walls are 1,500 and 400 feet in length and up to 35 feet high. The walls are deteriorated and cracking with visible seepage throughout. One portion of the wall has been previously repaired under emergency action by PennDOT to avoid imminent failure. Wall rehabilitation options included the use of passive rock anchors, new wall facing (precast and cast in place), and micropile foundation strengthening elements. Installation of these details will allow the existing wall to remain in place without significant impacts to S.R. 0376 (Parkway) during construction.

Evans Well Landslide Remediation, Sewickley, PA

Pennsylvania Department of Environmental Protection (PADEP)

Project Type: Landslide

Project Manager:
Brian Jarvis
Hydrocarbon Well Services, Inc.
304-472-9600

The Evans Well No. 1 is an abandoned oil and gas well located adjacent to Glen Mitchell Road. The well head is situated on a bench cut into the hillside approximately 10 feet above the roadway elevation. The well was originally installed vertically through the soils comprising the bench. The well head is currently inclined to the southwest approximately 35 degrees from vertical, indicating that the well casing has bent or sheared at some depth beneath the ground surface. PADEP contracted with Hydrocarbon Well Services to plug the well, to prevent future venting of gas and oil from the well site.

As a subconsultant, Gannett Fleming investigated the site, assessed the slope stability concerns, determined the likely position of the bend or shear in the well casing, and provided recommendations for maintaining the stability of the adjacent slopes both during and after the well plugging activities. We considered two alternates, soil nails and wire mesh facing or an anchored pile and lagging wall, to provide temporary excavation support during the well plugging activities. Both alternatives required backfill of the excavation created to access the well casing to restore the site to an acceptable grade. Based on the results of the evaluations it was determined that the soil nail stabilization with wire mesh facing was the most appropriate alternative to stabilize the slope during the well plugging activities. This decision was made based on the estimated cost, nature of the top/down construction technique required, and expedience of construction. Temporary excavation enabled the existing gas well to be capped, and the slope was reconstructed and stabilized.

Meeting Project Goals/Objectives: The PADEP needed a solution to access the well, plug the well, and ultimately stabilize the failing slope to the satisfaction of the municipality and adjacent property owners. Gannett Fleming worked with all stakeholders to design a solution that achieved all of these goals in an expedient manner.

Project Type: Landslide

Project Manager:
Doug Beitko
Garvin-Bower-Beitko
412-922-4440

Stepanick Road Landslide Remediation, White Oak, PA

Borough of White Oak

Stepanick Road, in White Oak Borough had been experiencing slope movements for a long period of time. The Borough had paved the road several times in the past, but the continued sloughing forced the Borough to seek a long-term stabilization solution.

Gannett Fleming prepared a slope stabilization design consisting of soil nails and GeoBrugg Tecco mesh to stabilize Stepanick Road in White Oak Borough, PA. Gannett Fleming completed stabilization evaluations using the GSTABL7 and Ruvolum software programs. Gannett Fleming prepared a working drawing submission that includes the layout and details of the proposed stabilization system sufficient to guide the construction.

Meeting Project Goals/Objectives: The project was delivered as a design/build package, and Gannett Fleming worked with the project stakeholders to complete the design and construction under an accelerated schedule.

Project Type: Rock Slope

Project Manager:
Don Glenn
Glenn Engineering
412-824-5672

Ice Plant Hill Road Rock Slope Remediation, Wilmerding, PA

Borough of Wilmerding

Chronic differential erosion and resulting rockfall impacted the roadway to the point of closure to protect the traveling public. This impacted the adjacent public fitness facility and surrounding traffic patterns. GeoBuild initially cleared the slope of vegetation, followed by scaling the slope surface of loose rock and debris. GeoBuild then installed 100 rock anchors and 18,000 square feet of high tensile strength steel mesh to stabilize the slope. Targeted application of reinforced shotcrete was employed in claystone units prone to undercutting of overlying sandstones. Permanent turf reinforcement matting was utilized behind the mesh to support natural revegetation of the slope where appropriate.

As a subconsultant to GeoBuild, Gannett Fleming provided geotechnical design for the rock anchors, shotcrete facing, and wire mesh slope treatment.

Meeting Project Goals/Objectives: Gannett Fleming worked with GeoBuild and project owners to develop a construction plan that maintained access to the fitness facility throughout the construction.

Project Type: Geotechnical Reviews

Project Manager:
Jonathan Moses, PE
PennDOT, District 11-0
412-429-4897

Geotechnical Open-End Agreement E03559, Geotechnical Reviews, Allegheny, Beaver, and Lawrence Counties, PA

PennDOT, District 11-0

Gannett Fleming performs reviews of various work products and project locations throughout the District as assigned by the District Geotechnical Unit as an extension of staff. Project assignments vary from investigation and evaluation of potential down drag and lateral squeeze of existing bridge foundations that are currently or are being considered to be leased for storage of various material by others, to emergency response for sites requiring geotechnical evaluations and guidance related to slope movements; rockfalls or subsidence features impacting facilities.

An example emergency response project is the recent landslide in the West End section of the City, which impacted S.R. 0019 and S.R. 0060 roadways. Gannett Fleming provided consultation to the District Geotechnical Engineer regarding impacts of the slide debris to existing retaining walls; discussed required removal and regrading limits; as well as preparation of conceptual options and estimates for prevention of further encroachment of additional slide materials onto existing roadways. Other assignments include review of geotechnical work products prepared by other consultants for conformance with PennDOT requirements, such as the proposed I-579 Cap structure; review of existing geotechnical infrastructure for potential rockfall events, and preparation of potential treatments; as well as peer review of designs being conducted by the Geotechnical Unit staff for in-house design projects.

Meeting Project Goals/Objectives: The goals of the assignments are to provide geotechnical support to the District to ensure that adequate resources are available for PennDOT to meet the various geotechnical needs for maintenance of their roadway systems as well as meeting design review schedules to allow projects to be completed in a timely manner. Gannett Fleming provides on-call resources for all of these services immediately upon request by the Department.

Project Type: Landslide

Project Manager:
Nicki Donahue
PennDOT
814-317-1650

S.R. 0271, Section 18B Johnstown Emergency Landslide Repair, Cambria County, PA

PennDOT, Bureau of Design

Following a heavy rainfall, the southbound lanes of S.R. 0271 experienced a mud and debris slide in the embankment of the roadway which moved down slope and severely damaged a home. PennDOT retained Gannett Fleming to investigate and develop the mitigation design for the landslide. Project activities included a right-of-way plan, completion of a Level 1B Categorical Exclusion Evaluation form, subsurface exploration, and design of a mitigation solution.

After a review of geologic literature, land use mapping, construction records, and laboratory results, Gannett Fleming initiated a subsurface exploration plan involving core borings and laboratory testing. We established a base map and performed a field reconnaissance noting scarps, seeps, and bedrock outcrops. We performed the topographic survey using an unmanned aerial vehicle (UAV) with a survey grade global positioning system (GPS), helping to ensure the safety of workers and providing high quality imagery.

To provide PennDOT with a cost-effective, technically-sound landslide mitigation design solution, Gannett Fleming evaluated three alternatives, including rock embankment, anchored soldier pile and lagging wall, and a soil nail wall. We recommended a rock buttress to stabilize the embankment based on estimated costs, schedule, and feasibility, and PennDOT selected that alternative.

Meeting Project Goals/Objectives: Gannett Fleming completed the investigation and design under an accelerated schedule, and the road re-opened to traffic within seven days of the slide occurrence.

S.R. 3038 Hill Road Landslide Repair, Beaver County, PA

GeoBuild, LLC

A landslide had been impacting Hill Road for several years before it advanced to a point where the State was forced to close this road, detrimentally impacting the residents living on the hillside above and below the slide area.

Gannett Fleming evaluated the landslide and developed the remediation design. Ultimately, a system of soil nails and high-strength steel wire mesh was designed to stabilize the slope along with a partial excavation of the failed soil mass and replacement with rock embankment. There were 70 soil nails each 25 feet long, generally installed from the roadway grade on or above the slide due to the restrictive terrain and accessibility below the roadway. This enabled efficient design installation while minimizing environmental impacts. Gannett Fleming developed final construction plans and specifications, coordinated design review with PennDOT District 11-0, provided construction consultation and oversight, and reviewed soil nail testing results.

Project Type: Landslide

Project Manager:
Paul Hale
GeoBuild, LLC
412-977-8184

Meeting Project Goals/Objectives: The project was delivered as a design/build package and Gannett Fleming worked with the project stakeholders to complete the design and construction under an accelerated schedule. The roadway was reopened within two months of completion of construction.

6. Corporation History

Gannett Fleming, Inc. is a multi-disciplined engineering firm with more than 100 years of experience in planning, design, and construction management services. Opening in 1915 with a three-person office in Harrisburg, Pennsylvania, the firm has grown to more than 2,200 employees in 50 offices throughout the world. Gannett Fleming is consistently ranked in the top 10 percent on Engineering News-Record's Top 500 Design Firms list. Gannett Fleming's staff has performed engineering services on thousands of diverse assignments, built a solid reputation for engineering excellence, and become partners in progress with a growing list of local, state, federal, and private clients, responding to their various needs and implementing practical solutions.

Gannett Fleming, Inc. was incorporated in Delaware (1989) and is wholly owned by Gannett Fleming Affiliates, Inc. Gannett Fleming Affiliates, Inc. is owned by employees of its subsidiary companies. Therefore, the firm retains an independent financial and professional status with no outside interests affecting the quality and objectivity of its services. Operational control is vested in the Board of Directors who are each investors in the parent company, Gannett Fleming Affiliates, Inc.

Gannett Fleming's size and diversity provide experience with geotechnical applications to a wide variety of projects and including a variety of intrusive and non-intrusive site investigations. Our experience in various geologic settings helps us address such concerns as landslides, sinkholes/cavities, mine subsidence, seepage, expansive soils, and seismic activity. We provide solutions for foundations, underground construction, earth structures, groundwater resources, and marginal building sites. This experience extends from initial site investigations through design, construction, and performance evaluation.

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
AML CONSULTANT QUALIFICATION QUESTIONNAIRE

Attachment "B"

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
Weston (Williams) Landslide	12, September, 2018	25-1613591

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
Gannett Fleming, Inc.	207 Senate Avenue, Camp Hill, PA 17011	Farley Gannett, Consulting Engineer (1915) Gannett, Seelye & Fleming, Inc. (1919) Gannett, Seelye & Fleming Corporation (1929) Gannett Fleming Corddry and Carpenter, Inc. (1948)

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)
717-763-7211	1915	Individual — Corporation X Partnership — Joint-Venture	YES — NO X

7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE

730 Holiday Drive, Foster Plaza 8, Suite 400, Pittsburgh PA 15220 / 412-922-5575 / Terry Downs, PG / 11

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER – OTHER PRINCIPALS
Robert Scaer, PE, Chairman & Chief Executive Officer Paul Nowicki, PE, Vice Chairman, President & Chief Operating Officer John Derr, PE, Executive Vice President Arthur Hoffman, Jr, PE, DGE, Executive Vice President & Secretary John Kovacs, PE, PMP, DGE, Executive Vice President Esther McGinnis, Executive Vice President Bryan Mulqueen, PE, Executive Vice President	Paul Lewis, PE, Senior Vice President Terry Downs, PG, Vice President

9. PERSONNEL BY DISCIPLINE

210	ADMINISTRATIVE	___	ECOLOGISTS	2	LANDSCAPE ARCHITECTS	121	STRUCTURAL ENGINEERS
36	ARCHITECTS	2	ECONOMISTS	35	MECHANICAL ENGINEERS	5	**SURVEYORS**
1	**BIOLOGIST**	111	ELECTRICAL ENGINEERS	1	**MINING ENGINEERS**	277	TRAFFIC ENGINEERS
74	**CADD OPERATORS**	42	ENVIRONMENTALISTS	___	PHOTOGRAMMETRISTS	846	OTHER
1	CHEMICAL ENGINEERS	4	ESTIMATORS	35	PLANNERS: URBAN/REGIONAL		
61	**CIVIL ENGINEERS**	37	**GEOLOGISTS**	15	SANITARY ENGINEERS		
181	CONSTRUCTION INSPECTORS	___	HISTORIANS	44	SOILS ENGINEERS	2146	TOTAL PERSONNEL
3	DESIGNERS	1	HYDROLOGISTS	1	SPECIFICATION WRITERS		
___	DRAFTSMEN						

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 8

***RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.**

10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? ☐ YES ☐ NO N/A

11. OUTSIDE KEY CONSULTANTS/SUB-CONSULTANTS ANTICIPATED TO BE USED. Attach "AML Consultant Qualification Questionnaire".

NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
N/A		_____ Yes _____ No
		_____ Yes _____ No
		_____ Yes _____ No
		_____ Yes _____ No
		_____ Yes _____ No
		_____ Yes _____ No
		_____ Yes _____ No
		_____ Yes _____ No
		_____ Yes _____ No

12. A. Is your firm's personnel experienced in Abandoned Mine Lands Remediation/Mine Reclamation Engineering?

YES Description and Number of Projects: Gannett Fleming is a recognized leader in environmental planning and engineering for abandoned mine lands (AML) investigation and remediation design. We know how to rapidly identify the unique aspects of each project early in the planning process. From site investigation and assessment to design and permitting, our excellent working relationship with clients and agencies enables us to develop environmentally sensitive, cost-effective reclamation, and acid mine drainage (AMD) mitigation strategies.

For the past 30 years, Gannett Fleming has specialized in the reclamation of active and abandoned mine sites. This work has included **more than 150 projects,** all of which required the preparation of regrading plans and associated drainage controls for erosion and sedimentation control and, in many cases, stream channel reconstruction or relocation. Our projects have included all aspects of mining and mine related activities including surface mines, deep mines, deep mine surface facilities, coal refuse disposal areas, overburden disposal areas, fly ash disposal, and associated support facilities. This work has included the preparation of in place material handling plans from regrading concurrent with active mine advance; regrading and drainage control plans for coal refuse bank removal and reclamation permits; and drainage controls for the highwall reclamation using flash products. Our experience in materials also includes revegetation planning to create stable reclaimed sites, considering the often-poor quality of resoiling materials available.

Gannett Fleming has worked with a variety of clients, including U.S. Army Corps of Engineers (USACE), to investigate abandoned mine sites relative to watershed assessments, reclamation of abandoned mine sites, hydrologic studies, AMD assessments, and mitigation through passive and active treatment technologies, design and construction specifications, National Pollutant Discharge Elimination System (NPDES) and/or environmental permitting, construction observation, and sustainable project planning.

NO

B. Is your firm experienced in Soil Analysis?

YES Description and Number of Projects: Gannett Fleming's long-term involvement with the coal mining industry and our active commitment to the beneficial use/reuse of organic wastes as soil amendments, make us uniquely qualified to specify and design AML resoiling projects. We have implemented the use of organic material from both municipal (biosolids) and industrial sources as a soil amendment to increase soil fertility/revegetation on **dozens of mine reclamation projects and for agricultural utilization.** Our resoiling analyses are based on optimizing the soil, plant, and water parameters needed to achieve successful plant establishment and permanent site revegetation. We have been innovative in locating sources of material for resoiling, including the use of over 12,000 tons/year of an organic based industrial wastewater solids from the Westfield Tanning Company in a variety of AML, commercial, and agricultural utilization projects. Through our mine reclamation designs, our staff members have extensive experience in assessing material needs for stable reclamation slopes and are proficient in evaluating the economics of material handling to retrieve materials cast downslope of mine sites. On a watershed basis, we have the experience to provide a comprehensive planning approach to identify priority needs and allocate material resources to optimize reclamation activities.

NO

C. Is your firm experienced in hydrology and hydraulics?

YES Description and Number of Projects: Gannett Fleming's experience with watershed hydrology and hydraulic evaluations has been gained through **hundreds of projects** involving project design and pollution controls. For projects in the mining regions, we have completed hydrologic evaluations ranging from erosion and sediment control design to major stream relocation projects. Our experience in mining includes both groundwater and surface water hydrology to evaluate the potential for AMD production, as well as for the design of treatment systems to control sources of AMD. Watershed studies have also been a major component of our work with AML reclamation designs and our AML reclamation plans completed for active remining projects.

NO

D. Does your firm produce its own Aerial Photography and Develop Contour Mapping?

YES Description and Number of Projects:__

Gannett Fleming has been creating mapping for projects using our Unmanned Aerial Vehicles (UAV) since the FAA policy changes at the end of August 2016. Since then we have developed mapping products for at least 10 projects including landslides, rock slope stabilization, dams, and water treatment projects. We currently have multiple employees certified through the FAA and cleared by the TSA to fly commercially and are now pursuing use of the technology directly on Gannett Fleming projects. Utilizing specialized post-processing software and custom in-house software, Gannett Fleming has developed a variety of 2D and 3D digital mapping products utilizing traditional photogrammetric methods and has achieved vertical accuracies within inches in open hard-surface areas.

NO

E. Is your firm experienced in domestic waterline design? (Include any experience your firm has in evaluation of aquifer degradation as a result of mining.)

YES Description and Number of Projects:__ Our staff has expertise in analyzing both the steady and transient state conditions of transmission and distribution systems. We have designed thousands of miles of water supply lines, on numerous projects, comprising many different types of water transmission and storage facilities, including ductile iron, PVC, HDPE, steel and prestressed concrete pipe; concrete, steel and prestressed concrete storage facilities; and special pressure-reducing control valves. Our experience also includes design of pumping facilities utilizing horizontal centrifugal pumps and vertical turbine pumps with constant or variable speed motors (using diesel or gas engines).

NO

F. Is your firm experienced in Acid Mine Drainage Evaluation and Abatement Design?

YES Description and Number of Projects:___ Evaluation of AMD treatment options typically requires an understanding of significant site characteristics, such as available area, topographic features, and site hydrology, as well as properties of the AMD to be treated. Gannett Fleming has completed **nearly 100 studies and designs** required to properly characterize and abate AMD. Where appropriate, monitoring programs include in-stream sampling within the affected watershed to allow prediction of the effects of proposed abatement plans on downstream water quality. Low measurement is a critical parameter in the determination of pollutant loadings. Gannett Fleming includes flow measurement in all monitoring programs using portable or permanent devices or developed stage/discharge curves.

Our AMD abatement methods include conventional chemical treatment and passive treatment, hydrologic isolation and sealing practices, surface reclamation and re-mining, and other appropriate technologies. Each treatment technology has unique characteristics that make it more or less appropriate for specific conditions. The best choice among the alternatives depends on both technical and economic factors. Conventional chemical treatment is normally the best solution for high volume, highly contaminated discharges, or short-term applications. Passive treatment is generally more economical for moderate flows and levels of contamination, particularly where long-term, low maintenance solutions are required. Gannett Fleming has matrix methodologies to rapidly determine the most cost-effective and technologically sound alternative where treatment is required.

Other forms of AMD abatement primarily focus on eliminating one or more of the factors causing AMD at their source, rather than treating the end product. Similar to the fire triangle, prevention of AMD requires elimination of the fuel (acid-forming materials) or one of the principal reagents (water or oxygen). On some sites, permanent reclamation is the most economical alternative for long-term abatement of AMD. When developing conceptual AMD abatement plans, Gannett Fleming considers all the approaches noted here, along with other available and emerging technologies in the field.

NO

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Weber, Mitchell W.	**21**	**28**	**16**

Brief Explanation of Responsibilities

Geotechnical Manager/Principal Geologist responsible for geotechnical and geological assignments of varying complexity on various types of civil engineering projects. His AML-related project experience includes more than 100 projects with responsibilities such as performing site inspections and subsurface investigations; evaluating mine subsidence potential; developing remedial designs; and preparing construction plans, specifications, and cost estimates. He performs site inspections, plans subsurface investigations, reviews AML maps and mining data, assesses the probability of mine subsidence, develops alternative causes of observed damage, and prepares construction contract documents. He has evaluated and designed remediation measures for more than 200 landslides with solutions including a combination of micropiles with a concrete cap and constructing a geogrid tied-back, vinyl sheet pile retaining wall; combination of interior drainage, soil modification, and grading improvements; soil nail and shotcrete retaining walls; geosynthetic reinforced soil walls; metal bin walls; and other innovative solutions.

EDUCATION (Degree, Year, Specialization)
BS, 1982, Geology
MS, 1985, Geology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Association of Engineering Geologists, American Society of Civil Engineers (ASCE, Association of State Dam Safety Officials, Water Management Association of Ohio, Society of American Military Engineers (SAME)	**Professional Geologist, 1993, Pennsylvania**

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Downs, Terry L.	**21**	**24**	**11**

Brief Explanation of Responsibilities

Geotechnical Project Manager/Senior Geologist providing oversight of the coordination efforts of engineers, geologists, technicians, and subcontractors in project investigations, design, and construction. Also provides quality assurance oversight of environmental site assessments (ESAs), reports, project drawings, and contract documents for constructability, as well as peer reviews for water resources, geotechnical, and transportation assignments. His specific AML-related experience includes more than 40 projects with responsibilities such as investigating source of AMD using chemical tracers, designing interceptor drains to dewater slopes, evaluating preexisting stability conditions, designing slope remediation measures, stabilizing abandoned mine workings and providing support for structure foundations, designing cast-in-place concrete mine shaft seal, performing subsurface investigation, evaluating subsurface conditions, inspecting drilling operations, conducting geologic literature reviews, assigning laboratory tests, reviewing aerial photographs, evaluating available mine maps, preparing boring logs, interpreting laboratory test data, and developing reports.

EDUCATION (Degree, Year, Specialization)
BS, 1983, Geology
MS, 1994, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
SAME, ASCE	**Professional Geologist, 1996, Pennsylvania**

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Morris, Matthew B.	10	19	

Brief Explanation of Responsibilities

Senior Engineering Geologist/Project Manager responsible for maintaining project schedules and budgets while producing quality work. Interfaces with clients and coordinates the efforts of field staff. Experienced in subsurface program development and management; geotechnical design analysis and evaluation; report, plan, and specification development; and construction services. Provides peer reviews and expert witness services for rock slope stability and landslide mitigation projects. His AML related experience includes more than 10 projects with responsibilities such as mine stabilization analyses, mine refuse densification, deep mine grouting design, and highwall restoration.

EDUCATION (Degree, Year, Specialization)
Geology, 1997, BS
Engineering Geology, 2004, MS

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Association of Environmental and Engineering Geologists, International Association of Engineering Geologists, ASCE, Geo-Institute, Pittsburgh Geological Society, Pennsylvania Council of Professional Geologists	Professional Geologist, 2005, Pennsylvania

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Kovacs, John W.	0	24	16

Brief Explanation of Responsibilities

Executive Vice President, Member of the Board of Directors, and Director, Earth Sciences Business Line engaging in subsurface investigations; foundation recommendations for rail projects, bridges, highways, and buildings; landfill designs; design of dams and earth structures; water and wastewater treatment plants and pumping stations; directional drilling of water and sewer mains; evaluation of rock and earth stability and ground modification techniques; field and laboratory testing and instrumentation; design of earth and rock tunnels; groundwater studies; hazardous waste investigations; and review of geotechnical construction activities. His AML related experience includes more than dozen projects with responsibilities such as inspecting drilling and grout placement operations to stabilize a deep mine, performing mine-remediation cost analyses, investigating mine stabilization, and evaluation of mine subsidence treatment.

EDUCATION (Degree, Year, Specialization)
BS, 1993, Civil Engineering
MS, 1996, Civil and Environmental Engineering
MBA, 1999

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
ASCE, Engineers Society of Western Pennsylvania, Engineers Without Borders, Association of State Dam Safety Officials, Project Management Institute, SAME, International Society of Soil Mechanics and Geotechnical Engineering, Geo-Institute, American Council of Engineering Companies	Professional Engineer, 2007, West Virginia Professional Engineer, 1997, Pennsylvania Professional Engineer, 2008, Ohio Professional Engineer, 2010, Alaska Professional Engineer, 9 additional states

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE AML DESIGN SERVICES

Software

- gINT
- DIGIPRO
- GTILT
- LOGWARE
- GEOSYSTEM
- SIGMA/W
- SETTLE3D
- PLAXIS
- DARWIN
- SVSLOPE 2D/3D
- SLOPE/W
- SLIDE
- SVFLUX 2D/3D
- SEEP/W
- CT SHORING
- CWALSHT
- RESSA
- APILE
- GROUP
- SHAFT
- LPILE
- RSPILE
- PYWALL
- GRLWEAP
- HELICAP
- SNAIL
- ROCFALL
- CRSP 3D
- AQTESOLV
- MODFLOW
- STEREOSTAT
- DIPS
- 3DM ANALYST

Equipment

- HERMIT 1000C
- HERMIT 1000B
- HERMIT 1000C
- HERMIT 1000C
- Extension Cable
- Extension Cable
- Extension Cable
- Extension Cable
- Extension Cable
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon GK-403 Readout Box
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
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- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon LC-1 Logger
- Geokon Ext. Cable (50 ft)
- Geokon Ext. Cable (50 ft)
- Geokon 25 psig VW Piezo.
- Geokon 25 psig VW Piezo.
- Geokon 50 psig VW Piezometer
- Geokon 50 psig VW Piezometer
- Geokon 50 psig VW Piezometer
- Geokon 50 psig VW Piezometer
- Geokon 2.5 psig VW Piezometer
- Geokon 5 psig VW Piezometer
- Geokon 5 psig VW Piezometer
- Geokon 50 psig VW Piezometer
- Geokon 50 psig VW Piezometer
- Geokon 50 psig VW Piezometer
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- Geokon 50 psig VW Piezometer
- Geokon 50 psig VW Piezometer
- Geokon 50 psig VW Piezometer
- Geokon 50 psig VW Piezometer
- Geokon 50 psig VW Piezometer
- Geokon 10 psig VW Piezo. (vented)
- Geokon 10 psig VW Piezo. (vented)
- Geokon 10 psig VW Piezo. (vented)
- Geokon 10 psig VW Piezo. (vented)
- Geokon 10 psig VW Piezo. (vented)
- Geokon 10 psig VW Piezo. (vented)
- Geokon 50 psig VW Piezo.
- Geokon 50 psig VW Piezo.
- Geokon 50 psig VW Piezo.
- Geokon LC-2 Logger
- Geokon LC-2 Logger
- Geokon LC-2 Logger
- Geokon LC-2 Logger
- Geokon LC-2 Logger
- Geokon LC-2 Logger
- Geokon 100 psig VW Piezo.
- Geokon 350 kPA 4500B VW Piezo.
- Geokon 350 kPA 4500B VW Piezo.
- Geokon 350 kPA 4500B VW Piezo.
- Geokon 350 kPA 4500B VW Piezo.
- Geokon 170 kPA 4500AL VW Piezo.
- Geokon 170 kPA 4500AL VW Piezo.
- Toughbook Computer
- Server with 24" monitor
- Mini IntelliGrout System (orange case)
- Borehole Camera System (Jr. Delux) Pan/Tilt
- Video Camera
- Borehole Camera Econo Nano
- 3DM-Digital Photogrammetry System
- 3DM-Survey tripod w/ tribach
- Robertson Downhole Geologger
- Video Borescope/Wireless Camera
- 5 meter cable for Video Borescope
- Disposable Bailers
- EnCore Samplers
- Sample Filtration Transfer Vessels
- Sample Filtration Filter Cannisters
- 1/2 inch poly tubing
- Crack Gauges (sell item)
- Water Testing Reagents
- Ludlum Model 3 Radiation Meter
- Sinco Digitilt Inclinometer
- Slope Indicator Inclinometer
- Sinco Horizontal Inclinometer
- Digitilt Datamate
- Digitilt Datamate (SN 35694)
- Transit
- Measuring Wheel
- Velocity Meter
- Flume (Stainless Cuthroat)
- Dewalt Rotary Hammer Drill
- Soil Gas Probe
- Soil Gas Probe
- RIMAC Field Compression
- Dynamic Cone Penetrometer (ELE)
- Soil splitter
- Proving ring
- (2 ft.) Infiltrometer Double-Ring (steel)
- (12) Infiltrometer Double Ring (aluminum)
- Soil Sampler Auger Kit
- Pressure Test Equipment (yellow box)
- 1' Infiltrometer Double-Ring (Aluminum)
- 1' Infiltrometer Double-Ring (Aluminum)
- 1' Infiltrometer Double-Ring (Aluminum)
- 1' Infiltrometer Double-Ring (Aluminum)
- 1' Infiltrometer Double-Ring (Aluminum)
- 1' Infiltrometer Double-Ring (Aluminum)
- Solinst Interface Probe Model 122
- ORS Interface Probe 15036
- Solinst H2O Level Indicator - (200')
- Heron Dipper-T (150')
- Heron Dipper-T (300')
- Heron Dipper-T (300')
- Heron Dipper-T (300')
- Solinst - (150 Ft.)
- Solinst H2O Level Indicator - (500')
- Solinst H2O Level Indicator - (300')
- Solinst H2O Level Indicator - (200')
- Slope Indic. H20 Level Indicator - (150')
- Slope Indic. H20 Level Indicator - (150')
- EnviroTech Water Level Meter
- 3.5 cfs Ramp Flume (in dead storage)
- LaMotte 2020 Turbidity Meter
- HACH Turbidimeter Model #16800
- YSI Salinity Cond. Temp. Meter
- YSI Salinity Cond. Temp. Meter
- YSI Salinity Cond. Temp. Meter
- YSI Salinity Cond. Temp. Meter
- HACH sension 5 Sal./Cond./Temp.
- YSI Model pH 100, SN #jc00175
- HACH Mn Test Kit Model MNPAN
- HACH Hardness Test Kit Model
- HACH Nitrate Test Kit Model NI-14
- HACH Iron Test Kit Model IR-18
- Lamotte Chemical Cl Test Kit
- HACH Nitrate Test Kit Model NI-11
- HACH pH Test Kit Model 17-N
- Lamotte Morgan Soil pH Test Kit
- HACH DR 100 Iron Test Colormeter
- Flow through cell
- YSI Multi parameter instrument
- Well Wizard Control for Dev. Pump
- Well Wizard Comp for Dev. Pump
- 1/2 HP Submersible Pump
- Mity-Vac II hand operated vac
- Grundfos MP1 1/2 HP Pump
- Grundfos Redi-flo Var Freq.Drive
- Honda Generator EB3000 C
- Sears 500 Craftsman Generator

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
S.R. 0030, A36 Emergency Landslide Repair, East Pittsburgh and North Braddock, PA	Pennsylvania Department of Transportation, District 11-0 45 Thomas Run Road Bridgeville, PA 15017	Design, contractor submission review, consultation during construction	$6,543,000	100%
S.R. 0376, Section A61 Retaining Wall, Pittsburgh, PA	Pennsylvania Department of Transportation, District 11-0 45 Thomas Run Road Bridgeville, PA 15017	Preliminary engineering, final design, and construction consultation services	$6,700,000	40%
S.R. 0271, Section 18B Johnstown Emergency Landslide Repair, Cambria County, PA	Pennsylvania Department of Transportation, District 9-0 1620 N. Juniata Street Hollidaysburg, PA 16648	Geotechnical consultation services, design, and construction plan preparation	$870,000	95%
Akron-Cleveland Road, Trail Slope Instability, Boston Heights, OH	Village of Boston Heights 45 E. Boston Mills Road Hudson, OH 44236	Assisting and advising the client on matters relating to the construction of the project, including geotechnical design, boring observation, lab testing, and construction observation.	$90,000	100%
MP85-99 Mainline Geogrid Slope Remediation, Westmoreland County, PA	Pennsylvania Turnpike Commission 2200 North Center Avenue New Stanton, PA 15672	Geotechnical consultation services, design, and construction plan preparation.	$3,000,000	60%
Tappan Lake Landslide Remediation, OH	Muskingum Watershed Conservancy District 2050 Reiser Avenue SE New Philadelphia, OH 44663	Geotechnical field exploration, investigation and slide delineation	$10,000	95%
CR 426 (Clarkson Road) Landslip Remediation, Columbiana County, OH	County of Columbiana 2355 S Market Street Lisbon, OH 44432	Design and development of construction plans	$150,000	30%

TOTAL NUMBER OF PROJECTS:

***As a mid-sized engineering firm, Gannett Fleming regularly has hundreds of projects in progress. The projects provided herein represent projects most relevant to WVDEP's scope of work.**

TOTAL ESTIMATED CONSTRUCTION COSTS: $

***As a mid-sized engineering firm, Gannett Fleming regularly has hundreds of projects in progress. The projects provided herein represent projects most relevant to WVDEP's scope of work.**

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-CONSULTANT TO OTHERS

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
WV DOH Landslide Repair Partnership – Geotechnical Slides	Geotechnical consultation services, design, and construction plan preparation and construction consultation.	Doddridge County, WV	09/2018	$950,000	$80,000 (fee)
Nelson Run Road Emergency Slope Stabilization, Ross Township, Allegheny County, PA	Geotechnical consultation services, design, and construction plan preparation and construction consultation.	Ross Township, Allegheny County PA	09/2018	$263,400	$24,000 (fee)
Heirendt Cabin Slope Stabilization, Sardis, OH	Geotechnical consultation services, design, and construction plan preparation and construction consultation.	Ken Heirendt Sardis, OH	09/2018	$70,000	$12,500 (fee)
Beaver Road Retaining Wall Remediation, Edgeworth, PA	Geotechnical consultation services, design, and construction plan preparation and construction consultation.	Edgeworth Borough, Allegheny County, PA	12/2018	$345,000	$25,000 (fee)
Waterman Road Slope Stabilization Project, Jefferson Hills, PA	Geotechnical consultation services, design, and construction plan preparation and construction consultation.	Jefferson Hills Borough, Allegheny County, PA	11/2018	$360,000	$37,500 (fee)
Reimer Road Subsidence Evaluation, Wadsworth, OH	Geotechnical investigation	City of Wadsworth 120 Maple Street Wadsworth, OH 44281	12/2018	$80,000	$15,000 (fee)

***As a mid-sized engineering firm, Gannett Fleming regularly has hundreds of projects in progress. The projects provided herein represent projects most relevant to WVDEP's scope of work.**

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
Atwood Lake Park Landslide Remediation, Mineral City, OH	Muskingum Watershed Conservancy District 2050 Reiser Avenue SE New Philadelphia, OH 44663	$250,000	2016	Yes
Bunola River Road Landslide Repair, Allegheny County, PA	Pennsylvania Department of Transportation, District 11-0 45 Thomas Run Road Bridgeville, PA 15017	$1,341,000	2017	Yes
S.R. 4070, Section A18, Wildwood Road Landslide Remediation, Hampton Township, Allegheny County, PA	Pennsylvania Department of Transportation, District 11-0 45 Thomas Run Road Bridgeville, PA 15017	$2,607,000	2017	Yes
Collier Garage Slope Stabilization, Allegheny County, PA	Port Authority of Allegheny County 345 Sixth Avenue, Third Floor Pittsburgh, PA 15222	$425,000	2017	Yes
Avalon Loop Retaining Wall Repair, Allegheny County, PA	Port Authority of Allegheny County 345 Sixth Avenue, Third Floor Pittsburgh, PA 15222	$394,000	2016	Yes
Dashields Locks and Dam Guide Wall Stabilization, Pittsburgh, PA	U.S. Army Corps of Engineers, Pittsburgh District 1000 Liberty Avenue Pittsburgh, PA 15222	$7,627,000	2016	Yes
S.R. 0376 Section A61 Retaining Wall, Pittsburgh, PA	Pennsylvania Department of Transportation, District 11-0 45 Thomas Run Road Bridgeville, PA 15017	$6,700,000	2017	Yes

***As a mid-sized engineering firm, Gannett Fleming regularly has hundreds of projects in progress. The projects provided herein represent projects most relevant to WVDEP's scope of work.**

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK FOR WHICH YOUR FIRM WAS RESPONSIBLE)

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
Elk Garden Slide Correction in Mineral County, WV	West Virginia Department of Transportation 1900 Kanawha Blvd E Charleston, WV 25305	$1,221,000	2017	Yes	GeoBuild, LLC
Piedmont – Keyser Road Slide Correction, Marion County, WV	West Virginia Department of Transportation 1900 Kanawha Blvd E Charleston, WV 25305	$426,000	2017	Yes	GeoBuild, LLC
Jennings B Randolph HW Stabilization Slope. Marion County, WV	West Virginia Department of Transportation 1900 Kanawha Blvd E Charleston, WV 25305	$683,000	2017	Yes	GeoBuild, LLC
Evans Well Landslide Remediation, Sewickley, PA	Pennsylvania Department of Environmental Protection 3rd Floor RCSOB 400 Market Street Harrisburg, PA 17101	$232,500	2017	Yes	Hydrocarbon Well Services, Inc
Stepanick Road Landslide Remediation, White Oak, PA	Borough of White Oak 2280 Lincoln Way White Oak, PA 15131	$169,900	2016	Yes	Geo Build, LLC
Ice Plant Hill Road Rock Slope Remediation, Wilmerding, PA	Borough of Wilmerding 301 Station Street Wilmerding, PA 15148	$352,500	2016	Yes	GeoBuild, LLC
S.R. 3038 Hill Road Landslide Repair, Beaver County, PA	Pennsylvania Department of Transportation, District 11-0 45 Thomas Run Road Bridgeville, PA 15017	$276,625	2017	Yes	GeoBuild, LLC

***As a mid-sized engineering firm, Gannett Fleming regularly has hundreds of projects in progress. The projects provided herein represent projects most relevant to WVDEP's scope of work.**

19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Abandoned Mine Lands Program.

Gannett Fleming's geotechnical practice includes over 70 geotechnical engineers and geologists, many with extensive experience in slope stabilization projects, including large rock and soil slides. Gannett Fleming also has other engineering disciplines such as structural, transportation, hydraulic, and environmental to support our slope stabilization design evaluations as required for any given project and design.

20. The foregoing is a statement of facts.

Signature: Terry G Downs Title: Vice President Date: 09/10/18

Printed Name: Terry Downs, PG

AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp. P=Personnel *	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS															PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional					
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Mitigation/Replacement	Construction Inspection/Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mitch Weber	Matthew Morris	John Kovacs	Terry Downs	William Roman	
ODNR McLaughin Highwall, OH	C		X			X					X				X		X	M/P					
ODNR Knight Highwall, OH	C		X			X					X				X		X	M/P					
WVDEP Osage Mine , WV	C		X	X	X	X			X		X				X		X	M/P					
ODNR Carrollton, OH	C			X					X		X						X	M/P					
ODNR Chapel Hill Shafts, OH	C				X				X		X				X		X	M/P					
ODNR Flinn Shaft, OH	C				X				X		X				X		X	M/P					
ODNR Smith Residence, OH	C			X					X		X						X	M/P					
ODNR Hutson II Shaft, OH	C				X				X		X				X		X	M/P					
ODNR Forney Sinkhole, OH	C			X					X		X		X				X	M/P					
MSI Seese Subsidence, OH	C			X					X				X				X	M/P					
OSM Parsons Shaft, IA	C			X					X		X		X				X	M/P					
ODOT MUS-93 Highway, OH	C			X					X		X		X				X	M/P					
ODOT MAH-80 Interstate, OH	C			X					X		X		X				X	M/P					
ODOT GUE-77/70 Interstate, OH	C			X					X		X		X				X	M/P	P		P		
ODOT GUE-70 Interstate, OH	C			X					X		X		X				X	M/P				P	
ODOT HOC/ATH 33 Highway, OH	C		X	X		X			X		X						X	M/P					
ODNR Smith Residence, OH	C			X					X		X						X	M/P					
ODNR Willow Residence, OH	C			X					X		X						X	M/P					
ODNR Blake Residence, OH	C			X					X		X						X	M/P					

PROJECT	Exp. Basis C=Corp. P=Personnel *	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS														PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional					
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Mitigation/Replacement	Construction Inspection/Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mitch Weber	Matthew Morris	John Kovacs	Terry Downs	William Roman	
ODNR Petty Residence, OH	C			X					X		X						X	M / P					
MSI Boord Subsidence, OH	C			X					X		X						X	M / P					
MSI Nelson Subsidence, OH	C			X					X		X						X	M / P					
Marjol Battery Subsidence, PA	C		X			X				X					X		X	M / P					
Wanzco Subsidence, PA	C			X					X		X						X	M / P			P		
PP&L Service Center, PA	C			X					X		X		X				X	M / P					
Pencek Subsidence, PA	C			X					X	X							X	M / P					
PTC Subsidence, PA	C			X					X		X		X				X	M / P			P		
Mountain Lake Subsidence, PA	C			X		X			X				X				X	M / P					
Blythe AML Subsidence, PA	C			X		X	X		X		X	X					X	M / P					
WWA Complex, PA	C			X					X		X		X				X	M / P					
Prog. Center Subsidence, PA	C			X					X		X		X				X	M / P					
Bills/Keefe Subsidence, PA	C			X					X		X		X				X	M / P					
OSM Podnar Landslide, PA	C			X		X			X		X			X			X	M / P					
IDNR Dam No. 29 Stability, IN	C		X			X		X	X		X	X		X			X	M / P					
IDNR Mauck Pond AML Dam, IN	C		X			X			X		X	X					X	M / P					
OSM Oregon Ave. Landslide, PA	C		X			X			X		X			X			X	M / P					
OSM Hamblin AML Landslide, TN	C		X			X					X	X	X	X			X	M / P		P			
OSM Bean AML Landslide, PA	C		X			X			X		X		X	X			X	M / P					
Private Client Landslide, MD	C		X			X			X				X			X	X	M / P			P		
ODNR Briar Rd AML Landslide, OH	C		X			X			X		X		X				X	M / P		P			

PROJECT	Exp. Basis C=Corp. P=Personnel *	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS															PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional					
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Mitigation/Replacement	Construction Inspection/Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mitch Weber	Matthew Morris	John Kovacs	Terry Downs	William Roman	
Blythe AML Landslide, PA	C			X		X	X		X		X	X					X	M/P	P		P		
ODNR Barton AMD Landslide, OH	C		X			X					X			X			X	M/P			P		
PaDEP Darmac AMD, PA	C		X			X					X			X		X		M/P					
COE Cheat River WS AMD, WV	C		X			X					X			X		X		M/P					
COE Tygart River WS AMD, WV	C		X			X					X			X		X		M/P					
OSM Dobson Mine AMD, PA	C			X		X					X			X			X	M/P					
ODNR DePriest AMD, OH	C					X					X			X		X	X	M/P					
ODNR Barton AMD, OH	C					X					X			X			X	M/P					
ODNR Huff Run AMD, OH	C		X			X					X	X		X	X			M/P					
ODNR Hiram Road AMD, OH	C		X			X					X	X		X	X			M/P					
ODNR Simmons Run AMD, OH	C		X			X					X	X		X	X		X	M/P					

* List whether project experience is corporate or personnel based or both.

** Use this area to provide specific sections or pages if needed for reference.

*** List Primary Design personnel and their functional capacity for the projects listed.

Attachment "C"

9. Anticipated Concepts and Proposed Methods of Approach for Achieving Goals and Objectives

We have developed the following approach to investigate and design a mitigation plan for the Weston (Williams) Landslide. This approach is based on the assumption that no previous survey mapping nor subsurface investigation has taken place at the site.

9.1. Background Review and Field Reconnaissance

Gannett Fleming has a breadth of experience investigating and mitigating landslides throughout Appalachia, and in particular, slope instabilities founded in mine spoil and colluvial soils, similar to the conditions at the Weston site. We will review the existing published and unpublished literature such as research papers, available Geotechnical Engineering Reports and existing project information to develop a preliminary subsurface model that will be used to guide the development of the subsurface investigation plan.

During this period, we will also perform a field reconnaissance of the site and surrounding area to note features of concern such as groundwater seeps, tension cracks and landslide scarps/benches/lobes. The field reconnaissance notes will be included on a site plan of the area generated using our unmanned aerial vehicle. Traditional ground survey methods will be utilized to augment the UAV data and identify the subsurface boring locations/ground features during the subsurface investigation program.

Gannett Fleming representatives will meet with project stakeholders to present the findings of the background investigation and field reconnaissance activities. At this time we will also present the preliminary subsurface investigation program that will include subsurface boring locations, anticipated boring depths, and geophysical investigation.

9.2. Subsurface/Geophysical Investigation

Upon concurrence from the project stakeholders Gannett Fleming will execute a subsurface investigation program intended to define the subsurface conditions and identify potential or existing failure planes present within the slope. Due to the marginally stable slope our approach is to collect as much subsurface data as possible with the least disturbance to the slope. Therefore, we are proposing to use both traditional drilling methods, including standard penetration tests and rock coring as well as resistivity and seismic geophysical surveys. The borings will allow for the collection of soil and rock samples for laboratory testing to aid in the estimation of the soil and rock parameters for design. We will use the geophysical surveys to obtain profiles both vertically and laterally across the slide. These profiles will be used in conjunction with the borings to develop a comprehensive subsurface model.

As we previously discussed, given the variable nature of the subsurface conditions in the vicinity of the well site, to minimize the amount of disturbance on the marginally stable slope and to collect higher quality subsurface data, we intend to utilize geophysical investigation methods In addition to a subsurface borings to characterize the materials and identify competent rock in the slope. We will utilize both seismic refraction and 2 Dimensional Electrical Resistivity Imaging (ERI) on 3 200-foot lines oriented perpendicular to the slope to augment the findings and further define the subsurface conditions present at the site. We believe by collecting this data along 3 critical cross sections up the slope augmented by the previously mentioned borings we can develop a clear understanding of the subsurface conditions at the site. Seismic refraction determines the seismic velocity and thickness of subsurface layers by measuring the travel-times of P-waves (the compressional wave). It is typically used to profile the top of rock, as rock tends to have much higher seismic wave velocities than soil. The refraction survey will be carried-out using a 24-channel Geometrics Stratavisor seismograph, Pro-Seismic spread cables, and 14 Hz vertical geophones spaced 5 ft apart. A 12-pound sledge hammer & steel plate will be used to create seismic waves.

2-Dimensional Electrical Resistivity Imaging identifies subsurface conditions based on differences in electrical resistivity. In short, water makes it easier to transmit an electrical current through materials. Since soil tends to hold on to moisture and rock generally does not have an affinity for water (excluding secondary permeability), it is a good method for profiling top of rock (TOR). Soil will be characterized by much lower electrical resistivity than rock. The ERI survey will be conducted using an Advanced Geoscience, Inc. (AGI) Supersting R8 earth resistivity imaging system and 1/4" diameter, 16"

long stainless steel stakes (electrodes) driven upwards of 6-8 inches into the ground. Data will be acquired using the Dipole-Dipole Array. The maximum depth of exploration is approximately 20% the length of the electrode array. A line that is 200 ft long will look to a maximum depth of approximately 40 ft below ground surface.

9.3. Design of Slide Mitigation Scheme

Upon the completion of the subsurface and geophysical investigation programs we will develop a model of the landslide that delineates the failure plane(s) and groundwater conditions. Gannett Fleming will develop a mitigation scheme to a level of detail sufficient to develop probable construction costs for each alternative.

Gannett Fleming will meet with the project stakeholders to present the finding and discuss the rationale for the conclusions and recommendations, obtain stakeholder input and obtain concurrence on the preferred course of action.

The schedule to complete the preliminary design activities is estimated to be 10 weeks from notice-to-proceed.

9.4. Preliminary Geotechnical Engineering Report

Gannett Fleming will prepare a Draft and Final Geotechnical Engineering report to present the data collect, document the findings and evaluations and present conclusions and recommendations. For proposal purposes, it is assumed that one set of comments will be provided from the project stakeholders. Gannett Fleming will address the comments and provide a final report to document the resolution of the comments.

9.5. Mitigation Plans and Specifications

Following the direction included in the Geotechnical Engineering Report we will prepare the construction plans and specifications necessary to mitigate the landslide and restore the disturbed areas. The plans are anticipated to include:

- Title Sheet
- Specifications
- Site Access and Grading Plan
- Stormwater Management and Erosion and Sedimentation Control Details
- Final Grading and Restoration Plan and Details

We anticipate submitting a 90% set of plans for review followed by the 100% submission that addresses any comments generated by stakeholders..