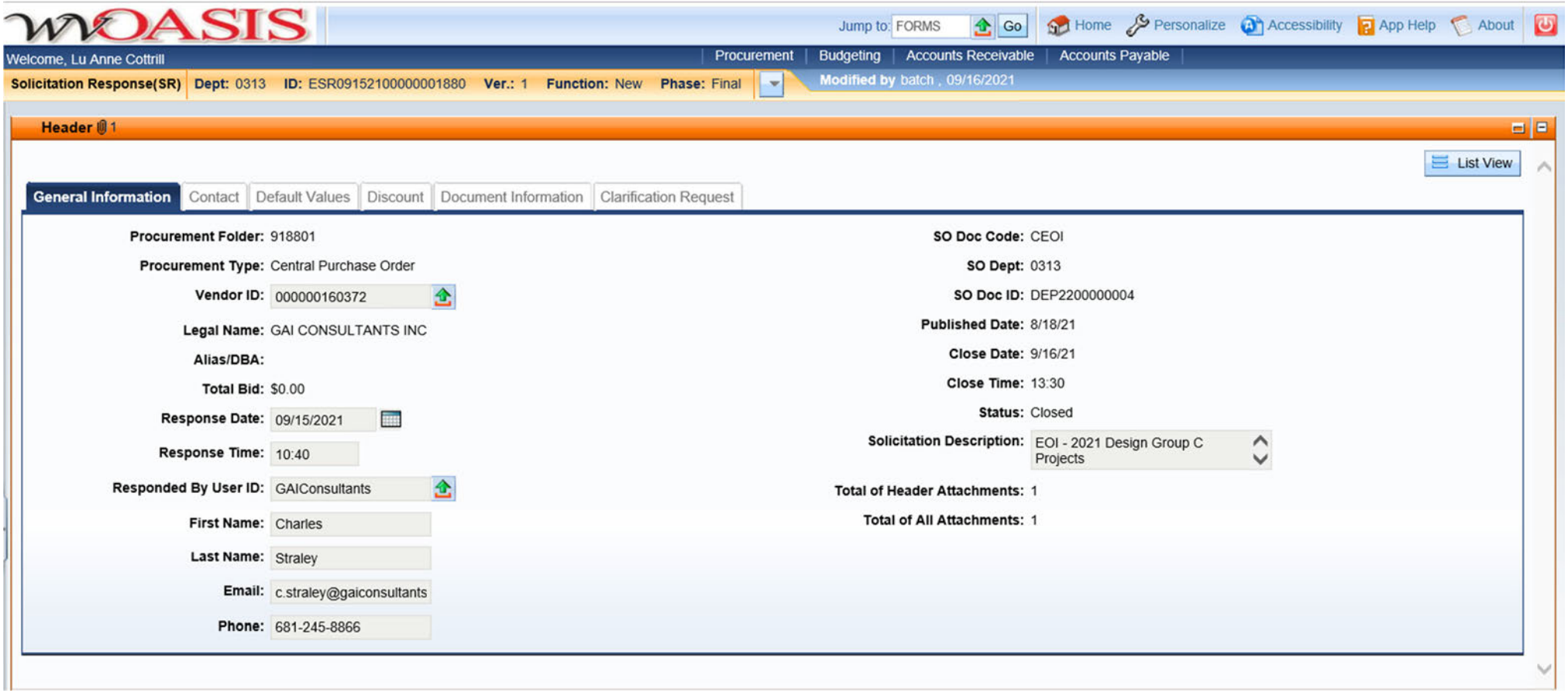
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.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Procurement
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Solicitation Response(SR) Dept: 0313 ID: ESR09152100000001880 Ver.: 1 Function: New Phase: Final
Modified by batch , 09/16/2021
Header 1
List View
General Information
Contact
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Document Information
Clarification Request
Procurement Folder: 918801
Procurement Type: Central Purchase Order
Vendor ID: 000000160372
Legal Name: GAI CONSULTANTS INC
Alias/DBA:
Total Bid: $0.00
Response Date: 09/15/2021
Response Time: 10:40
Responded By User ID: GAIConsultants
First Name: Charles
Last Name: Straley
Email: c.straley@gaiconsultants
Phone: 681-245-8866
SO Doc Code: CEOI
SO Dept: 0313
SO Doc ID: DEP2200000004
Published Date: 8/18/21
Close Date: 9/16/21
Close Time: 13:30
Status: Closed
Solicitation Description: EOI - 2021 Design Group C Projects
Total of Header Attachments: 1
Total of All Attachments: 1

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

State of West Virginia
Solicitation Response

Proc Folder:	918801
Solicitation Description:	EOI - 2021 Design Group C Projects
Proc Type:	Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2021-09-16 13:30	SR 0313 ESR09152100000001880	1

VENDOR

000000160372
GAI CONSULTANTS INC

Solicitation Number: CEOI 0313 DEP2200000004

Total Bid: 0 **Response Date:** 2021-09-15 **Response Time:** 10:40:52

Comments:

FOR INFORMATION CONTACT THE BUYER
Joseph E Hager III
(304) 558-2306
joseph.e.hageriii@wv.gov

Vendor
Signature X **FEIN#** **DATE**

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	EOI Engineering Design Services - Flatbush Highwall				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

Commodity Line Comments: EOI only

Extended Description:

*Dates of Service are estimated for bidding purposes only.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	EOI Engineering Design Services - Fords Run Drainage				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

Commodity Line Comments: EOI only

Extended Description:

*Dates of Service are estimated for bidding purposes only.

gai consultants®

Charleston Office
500 Lee Street East, Suite 700
Charleston, West Virginia 25301
T. 304.926.8100
F. 304.826.8180

September 16, 2021

Joseph E. Hager III
Senior Buyer
State of West Virginia
Department of Administration,
Purchasing Division
2019 Washington Street East
Charleston, West Virginia 25305

Expression of Interest
WVDEP-DLR-AML
Solicitation Number: CEOI 0313 DEP2200000004

GAI Project #R210672.02

Dear Mr. Hager:

GAI Consultants, Inc. (GAI) welcomes the opportunity to provide our Expression of Interest (EOI) to the State of West Virginia to provide Engineering Services for the West Virginia Department of Environmental Protection, Division of Land Restoration, Office of Abandoned Mine Lands and Reclamation (WVDEP-DLR-AML) 2021 Design Group C Projects (Projects), per the State's Solicitation No. CEOI 0313 DEP2200000004. Our EOI concisely addresses the issues indicated in the State's Centralized Expression of Interest (CEOI) dated August 18, 2021. GAI believes our Team is exceptionally qualified to meet the needs of this Project based on the following considerations:

- **Expertise in Geotechnical Engineering and Foundation Stabilization Projects.** Since 1958, GAI has established itself as a premier full-service engineering and consulting firm specializing in foundation and soil mechanics engineering. Our project experience ranges from landslide stabilization and restoration, to subsurface investigations and design, to site development and restoration. GAI is experienced in the design and implementation of many geotechnical techniques that can be applied to landslide mitigation, including standard buttressing and benching as well as more specialty techniques such as soil nails, anchors, and micropile insert walls. The GAI Team also has experience in the design of various types of retaining wall solutions.
- **Key Personnel.** GAI's proposed Project Manager, Jason Gandee, has over 14 years of engineering experience and has worked on over 25 reclamation projects for the WVDEP-DLR-AML, where he was responsible for site reconnaissance, monitoring subsurface exploration drilling, preliminary and final design drawings, technical specifications, engineer's cost estimates, and conducting pre-bid and pre-construction meetings with contractors. Project Advisor, Charles Straley, PE, PLS, MS, is a licensed Professional Engineer (PE) and Professional Licensed Surveyor (PLS) in West Virginia with over 30 years of experience specializing in project management and geotechnical engineering services for over 95 WVDEP mine reclamation projects throughout West Virginia. GAI's top performers specializing in Geotechnical, Foundation, and Roadway Engineering, in addition to our top Geologists, Hydrologists, Biologists, and Design Staff will be provided to the WVDEP-DLR-AML for these important Projects. Additionally, GAI has seven staff in our West Virginia Offices who are licensed West Virginia Professional Engineers.
- **Local Presence.** GAI has two offices located within the State of West Virginia, including Bridgeport and Charleston. GAI's Bridgeport Office is located in the same complex as the WVDEP-DLR-AML's Bridgeport Office. GAI's Charleston Office is located within a 10-minute drive of WVDEP-DLR-AML's Headquarters, located in Downtown Charleston, West Virginia. We are familiar with the region and have a thorough understanding of abandoned mine lands projects. GAI's Charleston Office has provided the State with quality engineering services for the abatement of problems arising from Abandoned Mine Lands since opening in 1985.
- **Extensive Experience.** The GAI Team has extensive experience in surface and underground coal mining, environmental, ecological principles, stream restoration and mitigation, on-site construction monitoring, and construction administration.
- GAI understands the importance of these Projects to the WVDEP-DLR-AML and we are dedicated to making these Projects a **top priority**.

We look forward to the opportunity to work with the State of West Virginia and the WVDEP-DLR-AML on these important Projects. Should you have any questions or would like to speak with us about our EOI or services, please feel free to contact Project Manager, Jason Gandee, at 681.245.6484, or Project Advisor, Charles Straley, at 681.245.8866 or via email at C.Straley@gaiconsultants.com.

Sincerely,
GAI Consultants, Inc.

Jason G. Gandee
Digitally signed by Jason G. Gandee
DN E J.Gandee@gaiconsultants.com, CN Jason G. Gandee
Date 2021.09.14 22 18 11-04'00'

Jason Gandee
Project Manager

Charles F. Straley
Digitally signed by Charles F. Straley
DN E c.straley@gaiconsultants.com, CN Charles F. Straley
Date 2021.09.15 08 08 12-04'00'

Charles Straley, PE, PLS, MS
Senior Engineering Manager

JG:CFS/mdw

Attachment: EOI: 2021 Design Group C Projects

EXPRESSION OF INTEREST

WVDEP-DLR-AML 2021 Design Group C Projects

Solicitation Number: CEOI 0313 DEP2200000004

September 15, 2021

GAI Project No. R210672.02

Prepared for:
State of West Virginia
Department of Administration,
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, West Virginia 25305-0130
Attn: Joseph E. Hager III, Senior Buyer

Prepared by:
GAI Consultants, Inc.
500 Lee Street East, Suite 700
Charleston, West Virginia 25301
304.926.8100 | gaiconsultants.com

gai consultants

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GAI Consultants, Inc. (GAI) welcomes the opportunity to provide our Expression of Interest (EOI) to the West Virginia Department of Environmental Protection, Division of Land Restoration, Office of Abandoned Mine Lands and Reclamation (WVDEP-DLR-AML) for 2021 Design Group C Projects (Projects). Our EOI concisely addresses the issues indicated in the State's Solicitation No. CEOI 0313 DEP2200000004, dated August 18, 2021.

INTRODUCTION

GAI began providing personalized consulting services in soil mechanics and foundation engineering services in 1958 in Pittsburgh, Pennsylvania. By steadily broadening our range of services and expanding our office locations throughout the United States, GAI has evolved into a premier employee-owned, award -winning, full-service engineering, environmental, and planning consulting firm. Today, through growth, acquisition, and much success, GAI has over 700 employees in 25 office locations, spanning across 12 states throughout the Northeast, Midwest, and Southern United States (U.S.), including offices in Bridgeport and Charleston, West Virginia.

GAI is a highly focused firm specializing in all aspects of geotechnical engineering and foundation design, in addition to providing engineering services for a wide array of civil and construction monitoring projects. These projects vary from landslide stabilization and restoration, to building foundation designs and evaluations, to site development and restoration, including subsurface investigations and design, surveying, utility relocation, and related activities.

GAI personnel have worked on mining-related projects throughout West Virginia and the Northeastern United States for over 63 years. **GAI has worked on over 100 AML projects for the WVDEP since 1985.** We are familiar with the region and have a thorough understanding of the regulatory approval process for various types of projects. Our personnel have a thorough knowledge and understanding of West Virginia's geologic and mineral environment, as well as the problems posed by past mining activities and practical methods to alleviate them. With 63 years of experience providing local expertise to worldwide clients in the development, government, energy, transportation, and industrial markets, GAI has the knowledge needed to perform geotechnical engineering services during design and construction phases of various projects for the State of West Virginia

GAI is currently ranked 145 out of **Engineering News Record's (ENR's)** Top 500 Design Firms, and 141 out of **ENR's** Top 200 Environmental firms. Our commitment to proactive employment of the most proficient and motivated talent helps our clients tackle the ever-changing challenges of our industry, technology, and regulatory practices. In the process, GAI has become an environmental and engineering hub of in-house engineers, geologists, scientists, and other professionals who are always accessible to our clients.

GAI ADVANTAGE

- GAI's AML expert and proposed Project Advisor, Charles Straley, has managed and participated in over 95 WVDEP mine reclamation projects. He has a completed understanding of WVDEP's guidelines, specifications, and project expectations. GAI's direct knowledge of the WVDEP AML program guidelines and personnel will also benefit the project.
- GAI's proposed Project Manager, Jason Gandee, has worked on over 25 reclamation projects for the WVDEP, where he was responsible for site reconnaissance, monitoring subsurface exploration drilling, preliminary and final design drawings, technical specifications, engineer's cost estimates, and conducting pre-bid and pre-construction meetings with contractors.
- GAI has two offices located within the State of West Virginia, including Bridgeport and Charleston. GAI's Bridgeport Office is located in the same complex as the WVDEP-DLR-AML's Bridgeport Office. GAI's Charleston Office is located within a 10-minute drive of WVDEP-DLR-AML's Headquarters, located in Downtown Charleston, West Virginia. We are familiar with the region and have a thorough understanding of AML projects.

AWARDS

- GAI received the 2008 Appalachian Region AMR Award for the Pennsylvania Department of Environmental Protection, Bureau of Abandoned Mine Reclamation's Fishing Creek Restoration and Maude Mine Reclamation Project.
- GAI received the 2006 Eastern Region Abandoned Mine Reclamation Award by the Federal Office of Surface Mining and the 2006 Professional Achievement of the Year by the Society of American Military Engineers for the Monongahela South Dangerous Highwall Reclamation Project.
- GAI received the 2003 National Award for Most Outstanding Abandoned Mine Lands Reclamation for the WVDEP-DLR-AML's Ned's Branch Impoundment Project, located in Mingo County, West Virginia. **GAI's proposed Project Advisor, Charles Straley, was the Project Manager for this award-winning project.** GAI completed the investigation and planning process for the second phase of the project while the first phase was still underway. Embracing the urgency requested by the WVDEP-DLR-AML, GAI provided solutions that re-established the integrity of the impoundment and restored the natural beauty of the site under an accelerated work schedule.

QUALIFICATIONS AND EXPERIENCE

SPECIALIZED EXPERIENCE FOR ABANDONED MINE LANDS

GAI has provided a wide variety of services to governmental agencies related to the reclamation of mine land problems. We have also completed numerous projects for the Office of Surface Mining Reclamation and Enforcement (OSMRE) and AML programs in West Virginia, Pennsylvania, Ohio, Maryland, and Virginia. GAI staff has experience in all aspects of mining-related design engineering, geology, hydrogeology, environmental science, economics, transportation systems and land-use planning, structural engineering, engineering mechanics, agronomy, anthropology, and archaeology, and various related professional disciplines.

GAI's reputation as one of the nation's foremost authorities on mine stabilization, mine fires, mine reclamation, and acid mine drainage (AMD) remediation is the foundation for the solutions we provide to clients. For over 63 years, we have been delivering premier services - geotechnical investigations, overburden characterizations, mine subsidence evaluations and mine stabilization design, mine shaft backfill operations, underground ventilation studies, mine atmosphere gas characterization, economic studies, risk assessments, AML reclamation studies, and mine fire investigations and abatement.

GAI's broad range of mining engineering, geological, geotechnical, environmental, water, and health and safety related services for mining engineering projects is supported by a dedicated staff of engineers, geologists, hydrogeologists, and environmental specialists. Our design capabilities include mine seals, haul roads, dams and impoundments, sedimentation ponds, coal preparation plants, water control and treatment facilities, acid mine drainage treatment, and waste disposal areas.

WVDEP AML Project Experience

GAI has provided the WVDEP with open-end and individual project contracts since 1984. A complete list of our WVDEP AML project experience is located in **Appendix A**. GAI's WVDEP project experience includes the following:

- AMD evaluation and treatment;
- Mine portal reclamation;
- Burning coal refuse piles, coal seams, and underground mines;
- Stream restoration;
- Hydrologic/hydraulic design of erosion and sediment control;
- Subsidence investigations and stabilization plans;
- Coal refuse pile reclamation;
- Coal refuse reprocessing evaluations;
- Landslide investigations and repair;
- Demolitions plans;
- Wetlands replacement and development;
- Environmental liability assessments;
- Soil analysis and revegetation plans;
- Water quality surveys and feasibility reports;
- Water supply system reviews and designs;
- Detailed reclamation plans;
- Permitting for deep and surface mine applications;
- Subsidence control plans; and
- Construction monitoring services.

GEOTECHNICAL AND SOIL MECHANICS EXPERIENCE

Since 1958, GAI has established itself as a premier engineering and consulting firm specializing in foundation and soil mechanics engineering. Over the following years, GAI has amassed formidable experience in full-scale load testing of foundations, calibrating analytical models, and developing computer programs for designing foundations. Our geotechnical engineers and geologists are highly proficient in the fundamentals of engineering, soil and rock mechanics, foundation and slope engineering, seismic analyses, underground and surface mining, mine fires, and mine subsidence, as well as dam design and inspection.

When structures are built in areas where the uneven rise of expanding subgrades can occur, structural damage that was not anticipated can be a major concern. GAI investigates subgrade movements, determines their causes, and designs repairs that stabilize structures or eliminates the problem.

With proven foundation analysis and design capabilities, GAI also focuses on construction–using detailed quality control procedures to monitor the construction of all types of structures and foundations. As a matter of routine, we perform pile, pier, or plate load-testing, and vibration monitoring. We also conduct pre-blast or pre-driving surveys of facilities near a construction or demolition project to determine the presence of pre-construction damage.

Operating out of 25 office locations throughout the United States, our specialists bring with them a wealth of knowledge from years of academic training, research, and practical field experience – knowledge that is bolstered by expertise from GAI staff members in other disciplines, such as structural engineering, groundwater engineering, and hydrologic/hydraulic engineering.

Geotechnical Engineering and Soil Science Specific Capabilities

- Geologic, subsidence, and landslide assessments;
- Landslide and subsidence studies and remediation design;
- Subsurface studies, investigations, and stabilizations;
- Geologic studies and reconnaissance;
- Site characterization and undisturbed soil sampling;
- Soil borrow investigations;
- Foundation recommendations, design, and research;
- Foundation testing, analysis, and detailed design;
- Geogrid Reinforced Soil and Mechanically Stabilized Earth (MSE) design;
- Slope stability analysis and embankment and cut slope design;
- Catastrophic damage inspection and analyses;
- Stress capacity investigations;
- Shop drawing review;
- Soil, rock anchors, and nails;
- Concrete, rock, grout, and cone penetrometer testing;
- Pile and caisson drilling inspection;
- Drilled shaft and grillage design;
- Wastewater disposal and agricultural utilization;
- Soil improvement techniques;
- Geoarchaeology, geomorphology, and pedology; and
- Construction monitoring.

CONSTRUCTION ENGINEERING AND INSPECTION EXPERIENCE

GAI monitors the daily activities and building materials that are critical to Construction Engineering and Inspection projects with the following in mind—client service, construction integrity, and a successfully completed project. Whether GAI provides transportation construction monitoring, construction engineering and inspection for development, or construction management services for massive energy facility projects, our pool of resident engineers and construction specialists skillfully address the distinct construction challenges of clients in all industries.

GAI's construction professionals test construction material quality, inspect workmanship, and monitor on-site construction safety. Our services often include progress and materials reporting, shop drawing review, plan interpretation, pay request administration, claims and disputes resolution, and more. We follow each stage of construction to verify that the work is executed in accordance with the contract documents, and administer concrete, bituminous material, steel, and soil sample testing.

GAI provides quality control and cost protection throughout the building process so the work meets or exceeds quality standards. Clients' projects are professionally delivered with minimal or no construction delays, cost overruns, or safety violations. GAI's project portfolio includes construction services for major highways and bridges, large-scale site developments, wastewater treatment plants, industrial facilities, and power plants. We specialize in complex, multiphase construction projects for state agencies, municipalities, institutions, private developers, and power providers. Our repeat success is based on building trusted relationships with clients and contractors and helping them meet their project goals.

PROPOSED SUBCONSULTANTS

EnviroProbe Integrated Solutions - Subsurface Drilling Services

GAI is proposing to use EnviroProbe Integrated Solutions (EnviroProbe) for Subsurface Drilling Services and to assist in engineering and testing services. Founded in 2006, EnviroProbe is a woman-owned small business located in Morgantown and Nitro, West Virginia. EnviroProbe's diverse staff includes engineers, environmental professionals, geologists, scientists, Licensed Remediation Specialists, certified well drillers Licensed Water Well Drillers, equipment operators, inspectors/field technicians, and laborers. EnviroProbe's experienced operators have provided direct-push, environmental drilling, and geotechnical drilling services since 1995. EnviroProbe's staff values industry-leading safety practices holding high standards for both employee and jobsite safety 24/7. EnviroProbe's drillers are certified, and all of their team members undergo strict protocols – ensuring safety is a number one priority at all times. EnviroProbe is a member of ISNetworld, Avetta, PEC Safety, and SafeLandUSA.

Geotechnics, Inc. - Construction Materials Testing Services

For more than 20 years, projects around the world have been built using Geotechnics, Inc. (Geotechnics). Their Geotechnical laboratories are equipped to handle any testing need, no matter the size or scope. From a few samples with basic classification tests to several hundred samples with a complex series of characterization, compaction, consolidation, strength and permeability tests. Their extensive facilities enable them to perform a myriad of tests simultaneously on samples of any size and their geotechnical laboratories are home to some of the most comprehensive test equipment in the country. The Geotechnics testing laboratory is recognized as being in compliance with NQA-1-1994 Edition Quality Assurance Requirements for Nuclear Facility Applications. Geotechnics has facilities near Pittsburgh, Pennsylvania; Raleigh, North Carolina; and Nashville, Tennessee.

White Avenue Slip Project, City of Morgantown, WV

KEY PERSONNEL EXPERIENCE

GAI's key personnel for this Project specialize in mine reclamation projects, including landslide stabilization and mitigation, grading/drainage, water studies and design, AMD drainage mitigation, highwall design, feasibility studies, stream restoration, and preparation of construction documents. Our proposed full-service Team is particularly well-suited for this project due to their previous experience and expertise with AML projects. Resumes of GAI's Project Team are located in **Appendix B**.

Jason Gandee - Project Manager

Mr. Gandee is a Senior Project Engineer out of GAI's Charleston Office and is our proposed Project Manager for these Projects. **He has 14 years of experience specializing in civil engineering design and has been the project engineer for over 25 reclamation projects for the WVDEP, Office of Abandoned Mine Lands.** Mr. Gandee's responsibilities have included site reconnaissance to determine the scopes of projects, subsurface monitoring and exploration drilling, preliminary and final design drawings, technical specifications, engineer's cost estimates, and conducting pre-bid and pre-construction meetings with contractors. He also has regulatory agency permitting experience for AML projects, including NPDES construction stormwater permits and United States Corps of Engineers (USACE) regional permits. His experience with special reclamation projects includes developing construction plans to eliminate highwalls, providing hydrologic and hydraulic design to manage stormwater on sites, designing ponds for active treatment, and providing design to regrade refuse piles. Mr. Gandee will serve the WVDEP's interest by coordinating and managing all fiscal and personnel aspects of the Projects. He has a thorough understanding of WVDEP guidelines, specifications, and project expectations. Mr. Gandee received his BS in Civil Engineering Technology from West Virginia University Institute of Technology.

Charles Straley, PE, PLS, MS - Project Advisor

Mr. Straley is a Senior Engineering Manager out of GAI's Charleston Office and will serve as our proposed Project Advisor for these Projects. He has over 35 years of engineering experience and is a licensed Professional Engineer (PE) in West Virginia, Ohio, Kentucky, and Indiana; and a Professional Licensed Surveyor (PLS) in West Virginia. **Mr. Straley has managed and participated in the design and development of reclamation plans and feasibility studies for over 95 WVDEP mine reclamation projects.** He has over 35 years of experience specializing in geotechnical engineering, including all aspects of landslide investigations, subsurface exploration, foundation and embankment design, slope stability, material and construction specifications, laboratory testing, and construction administration, management, and monitoring. His management experience, combined with his geotechnical engineering expertise, will aid in the successful completion of this Project in a timely, technically sound, and cost-efficient manner. Mr. Straley is a native of West Virginia and holds an MS in Geotechnical Engineering and a BS in Civil Engineering from The University of Akron.

Donald Splitstone, PE - Geotechnical Engineering Lead

Mr. Splitstone is an Engineering Manager with GAI out of our Cranberry, Pennsylvania Office and will serve as the Lead Geotechnical Engineer for this important Project. He has over 23 years of experience specializing in design and construction of geotechnical engineering projects, including developing geotechnical investigations, treatment schemes, details, plans, and specifications for various design projects. He has also been involved in the analysis, design, and report preparation for a multitude of projects, including shallow and deep (driven and drilled) foundations, various types of retaining walls and support of excavation, embankment and cut-slope stability, landslide investigations and remediations, karst conditions, and flexible and rigid structural pavement. He has experience with design-bid-build, design-build, and accelerated construction project delivery mechanisms. Mr. Splitstone's field and construction experience includes site reconnaissance and inspection for subsurface investigations (sample identification and logging), general construction inspection, forensic investigations, and specialty geotechnical construction. Mr. Splitstone is a licensed PE in West Virginia, Ohio, Pennsylvania, and Florida. His graduate studies were in Geotechnical Engineering at the University of Pittsburgh. He holds a BS in Civil and Environmental Engineering from the University of Pittsburgh, and a BS in Engineering Physics from Miami University in Oxford, Ohio.

Keith Schoon, PE, MS - Geotechnical Engineering Support

Mr. Schoon is a Project Engineer with GAI out of our Pittsburgh Office and will serve as a Geotechnical Engineer for this Project. He has over 10 years of experience specializing in design and construction of geotechnical engineering projects, including embankment stability analyses and remediation recommendations, seepage analyses, design of deep foundations and retaining structures, and geotechnical investigations. He recently was the Geotechnical Task Manager for the White Avenue Slip Project located in Morgantown, West Virginia. This project required on-site investigations to determine the exact condition and size of the landslide, stabilization of the hillside, road repair, drainage upgrades, and remediation below the slip. His experience includes construction engineering and inspection, plan preparation, quantity take-offs, cost estimating, and report writing. Mr. Schoon is a licensed PE in Pennsylvania. He received his MS and BS in Civil Engineering from The University of Pittsburgh.

A. Edward Sciulli, PG, PMP - Lead Geologist

Mr. Sciulli is a Senior Hydrogeology Manager with GAI out of our Pittsburgh Office and has 35 years of experience specializing in managing small and large-scale remedial and site investigations, feasibility studies, and geophysical surveys. He is a licensed Professional Geologist in Pennsylvania and New York and has managed numerous AMD watershed assessment projects related to former mining activities. He is highly experienced conducting soil and groundwater evaluation, remediation, aquifer testing, contaminant fate and transport valuations, hazardous and solid waste regulation, and environmental health and safety. Mr. Sciulli also conducts Phase I & II Environmental Site Assessments and is instrumental in designing and implementing site investigations. His experience includes being the Project Manager for AMD impacts within the Upper and Little Schuylkill River for the Schuylkill County Conservation District in Pennsylvania, which received the Governor's Award for Watershed Stewardship. Mr. Sciulli received his BS in Geosciences from The Pennsylvania State University.

Richard Ruffolo, PG, MS - Geological Support

Mr. Ruffolo is a Geological Manager with GAI out of our Pittsburgh Office and has 20 years of geological experience specializing in mine subsidence, with experience in landslide investigations and remediations; subsurface exploration and investigations; foundation and slope stability analysis and design; foundation design; and geotechnical report writing. He is a licensed Professional Geologist in Pennsylvania, North Carolina, and Kentucky. Mr. Ruffolo's AML experience includes assisting with subsurface investigations, hydrogeological site characterizations, and monitoring drilling to identify abandoned deep coal mine conditions for multiple acid mine pollution abatement projects. He also evaluated the possibility of injecting alkaline coal ash into a 537-acre mine to mitigate AMD polluting numerous watersheds. Additionally, he has provided his geological expertise to landslide investigation and remediation projects throughout West Virginia and Pennsylvania. Mr. Ruffolo received his MS in Geology from Kent State University and holds a BS in Environmental Geology from The University of Pittsburgh.

Shane Fisher, PE - Civil Engineering Lead

Mr. Fisher is an Assistant Engineering Manager with GAI out of our Bridgeport Office and has 16 years of civil engineering experience. He is a licensed Professional Engineer in West Virginia, Virginia, North Carolina, and Maryland. Mr. Fisher's AML experience includes performing design and cost estimating for AML and industrial wastewater projects. He specializes in environmental permitting for numerous federal, state, and local regulatory agencies. His experience includes designing and analyzing roadways, bridge structures, drainage systems, and sanitary and industrial water and wastewater systems; flood mapping; floodplain compliance; and construction monitoring for disaster-related funds. He also manages erosion and sediment control, and construction stormwater and roadway permitting projects for GAI. Mr. Fisher received his BS in Civil Engineering Technology from Fairmont State University.

Mary Beth Berkes, PE, MS - Civil Engineering Support

Ms. Berkes is an Assistant Civil Technical Leader with GAI out of our Pittsburgh Office and has 13 years of civil engineering experience. She is a licensed Professional Engineer in West Virginia, Pennsylvania, Kentucky, and Ohio and specializes in stream restoration design, stream and wetland mitigation design, hydrologic and hydraulic analyses, inundation studies and investigations, and design of hydraulic structures. She has completed training on Natural Channel Design (Rosgen Levels I through IV), hydrologic and hydraulic permitting and procedures, and advanced HEC-RAS and scour analyses. Ms. Berkes received the prestigious Young Professional of the Year Award in 2018 from the Society of American Military Engineers. She received her MS in Civil Engineering from Oregon State University, and BS in Civil Engineering from The University of Pittsburgh.

Kerry Frech, PE, MEng - Hydrology and Hydraulics Engineering Lead

Mr. Frech is a Civil Technical Leader in GAI's Pittsburgh Office with over 42 years of hydrologic and hydraulic engineering experience. He is a licensed Professional Engineer in West Virginia and Pennsylvania, specializing in applying hydrologic and hydraulic principles to the development of water- and land-related resources. Mr. Frech has worked on numerous AML reclamation projects for government, and public and private clients, including the Pennsylvania Department of Environmental Protection (PADEP) and the USACE. He has also performed hydrologic and hydraulic analysis for numerous projects in West Virginia for the WVDEP Dam Safety Division and the West Virginia Department of Transportation, Division of Highways (WVDOH). Mr. Frech's project experience ranges from planning and feasibility-level studies to design and the preparation of construction documents, to performing hydrologic and hydraulic modeling. He received his MEng in Environmental Engineering and his BS in Civil Engineering from Cornell University.

Adam Scheller, PE, MS, MBA - Hydrology and Hydraulics Engineering Support

Mr. Scheller is an Engineering Manager in GAI's Pittsburgh Office with 16 years of experience specializing in hydrology and hydraulics, stormwater management, erosion and sediment control, as well as civil engineering. He is a licensed Professional Engineer in Pennsylvania and provides hydrologic and hydraulic design and analysis for bridges, culverts, channels, ponds, dams, stream encroachments, impoundments and wetlands. Mr. Scheller's experience includes engineering analysis for stabilization of underground coal mines beneath a proposed waste management facility located in Virginia. He also was responsible for providing engineering services for the Jonathan Run Acid Water Treatment Plant for The University of Pittsburgh, where he assisted in the design of an active treatment system for the project, including design recommendations, calculations, and writing of a specification package. Mr. Scheller received his MBA from Point Park University, and his MS and BS in Civil and Environmental Engineering from The University of Pittsburgh.

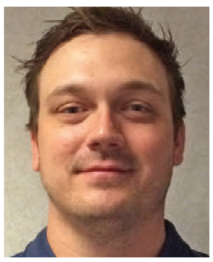
Christopher Hennessey, PE, MS, LEED®AP - Structural Engineering Lead

Mr. Hennessey is an Engineering Manager in GAI's Cranberry, Pennsylvania Office with 18 years of experience specializing in structural investigations, structural rehabilitations, structural evaluations, and the design of structural building systems. He is a licensed Professional Engineer in Virginia, Texas, Kentucky, and Pennsylvania and is a Leadership in Energy and Environmental Design Accredited Professional (LEED® AP). Mr. Hennessey is currently the Lead Structural Engineer for the PADEP, Bureau of Abandoned Mine Reclamation's Cresson AMD Treatment Project, where he is responsible for the design of the water containment structures, the plant control building, support framing of the pipes, open troughs that convey water and chemicals throughout the plant, support framing of the elevated access platform, and mat foundations for the pumps. His expertise includes selection of structural systems to the preparation of detailed calculations, specifications, and construction drawings. Mr. Hennessey received his MS in Structural Engineering from Virginia Tech, and his BS in Civil Engineering from The University of Tennessee.

Joseph States, PE, MS - Structural Engineering Support

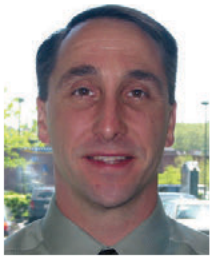
Mr. States is an Assistant Engineering Manager in GAI's Cranberry, Pennsylvania Office with 12 years of experience specializing in structural engineering and design of steel and concrete structures, structural assessments, and structural rehabilitation. He is a licensed Professional Engineer in Pennsylvania and Ohio. His experience includes complex steel framing systems, mechanical and electrical equipment support, concrete mat foundations, clarifiers and other environmental concrete structures, retaining wall system design, and building assessment and rehabilitation projects. He is currently working on designing structural elements of the Cresson AMD Drainage Treatment Plant for the PADEP, Bureau of Abandoned Mine Reclamation. This project includes a concrete clarifier, steel mezzanine and pipe bridge, and concrete foundations for various tanks and pieces of equipment. Mr. States received his MS in Structural Engineering from Lehigh University, and his BS in Civil and Environmental Design from Carnegie Mellon University.

Alex Cook - Environmental Lead



Mr. Cook is a Senior Project Environmental Specialist in GAI's Charleston Office with 15 years of experience specializing in environmental and biological surveys and field assessments, including wetland delineations, jurisdictional stream determinations, vegetation surveys, benthic and water quality sampling, fish and herpetology studies, and threatened and endangered species surveys. He is familiar with current West Virginia and federal regulations, including the Section 401 and 404 permitting process [Clean Water Act (CWA)] and Section 7 consultation [Endangered Species Act (ESA)]. His experience includes working with the WVDEP, Division of Water and Waste Management, as the Environmental Lead for the Unknown Tributary #1 of Teter Creek Project, located in Barbour County, West Virginia. He also has implemented and performed bi-annual Narrative Water Quality Assessments (NPDES compliance) for a proposed surface mine project that included habitat assessments, water quality sampling, fish surveys, benthic macroinvertebrate surveys, and geomorphic and sediment transport studies following WVDEP and federal protocols. Mr. Cook received his BS in Biology from West Virginia State University.

Jeffrey Polonoli - Environmental Support



Mr. Polonoli is a Senior Project Environmental Specialist in GAI's Pittsburgh Office with 24 years of experience specializing in environmental investigations, including wetlands and streams, habitat assessments, rare, threatened, and endangered plant species, invasive plant species, and mitigation site monitoring. He has a strong background in plant identification and has performed numerous field and botanical surveys in West Virginia. He is also experienced in performing vegetation and water level monitoring within mitigation sites. Mr. Polonoli's experience includes working as a field botanist for The Nature Conservancy in Missouri, where he was charged with vegetative identification of Midwestern Flora and Plant Communities. He was also the acting Curator of Collections at the esteemed Phipps Conservatory and Botanical Gardens in Pittsburgh, Pennsylvania. Mr. Polonoli is a U.S. Fish and Wildlife Service approved surveyor for T*rifolium stoloniferum, Scirpus ancistrochaetus,* and *Isotria medeoloides* in West Virginia. He received his BS in Secondary Education/Biology from California University of Pennsylvania.

Michael Holbert, PE - Roadway and Traffic Engineering Lead

Mr. Holbert is a Senior Transportation Technical Leader in GAI's Bridgeport Office with over 25 years of experience in roadway and transportation engineering, including developing plans, specifications, and cost estimates; design studies; and preliminary and final engineering for numerous roadways and bridges. He is a licensed Engineer in West Virginia, Pennsylvania, and Maryland. Mr. Holbert is intimately familiar with local, state, and federal regulatory processes for roadway projects. His project management experience, combined with his 25 years of civil engineering and roadway and transportation engineering expertise, will aid in the successful completion of these projects in a timely, technically sound, and cost-efficient manner. Mr. Holbert was recently the Project Manager for the City of Morgantown's White Avenue Slip Project. Prior to working with GAI, Mr. Holbert worked for the WVDOH. He holds a BS in Civil Engineering (Summa Cum Laude) from West Virginia University.

Rachel McCoy, PE - Roadway and Traffic Engineering Support

Ms. McCoy is a Project Engineer working out of GAI's Charleston Office and will provide Roadway and Traffic Engineering Support, as needed, for these Projects. She has over seven years of civil engineering experience, including roadway design, permitting, utility coordination, cost estimating, plan development, and maintenance of traffic design. Ms. McCoy is a licensed Professional Engineer in West Virginia and Virginia. Prior to her employment with GAI, Ms. McCoy worked for the WVDOH, serving as Project Manager for several roadway and bridge projects. Her experience includes coordinating utility relocations, designing gas and water line relocations, designing roadway horizontal and vertical alignments using MicroStation and InRoads, and determining appropriate right-of-way takes. She recently provided roadway and traffic engineering support to the White Avenue Slip Project for the City of Morgantown. Ms. McCoy received her BS in Civil Engineering with a Minor in Mathematics from the West Virginia University Institute of Technology.

Terry Queen - Construction Technician Lead

Mr. Queen is a Lead Construction Technician in GAI's Charleston Office and has over 25 years of construction monitoring and drafting experience. He specializes in construction monitoring for municipal and infrastructure projects, develops preliminary and final designs for site development projects, and prepares construction drawings for highway and bridge projects. Mr. Queen has developed preliminary and final designs for mine reclamation sites in West Virginia and has been the Lead Construction Technician for numerous WVDEP AML reclamation projects. He has also worked on numerous landslide projects in West Virginia for the WVDEP and the Morgantown Utility Board, among others. His experience includes monitoring drilling activities, providing daily boring logs, and rock coring sampling. Mr. Queen's higher education experience includes Drafting and Design Courses from the West Virginia University Institute of Technology.

Michael Doyle - Design Lead

Mr. Doyle is a Senior Designer in GAI's Charleston Office and has 23 years of experience specializing in Computer-Aided Drafting and Design. His experience includes industrial/commercial site development and planning projects to large-scale roadway design projects. Mr. Doyle has been responsible for the design of numerous AML reclamation projects for the WVDEP's AML and Reclamation Program. His design experience includes alignment layout, cross-sections, vertical profiles, site detailing, quantities, and design of both large and small sites. He has prepared design and construction plans, reports, permits, and cost estimates for projects. Mr. Doyle's computer skills include AutoCAD Civil 3D, MicroStation, Bluebeam PDF, Revu, Maptech, and Terrain Navigator Pro. He received his AS in Computer Aided Drafting and Design from Triangle Tech.

Jeremy Slodowick - Design Support

Mr. Slodowick is a Senior Lead Designer in GAI's Pittsburgh Office and has 18 years of experience specializing in grading design and developing construction documents, as-built drawings, master plans, surveys and permit applications, including creating and refining conceptual and construction details. He has in-depth knowledge of AutoCAD Civil3D, as well as AutoTURN, Bluebeam PDF Revu, Adobe Photoshop, MicroStation, and Acrobat. Mr. Slodowick uses CAD software to create surveys, design site layout and grading, and create construction plans, sections, and details. He develops cost estimates, specifications, construction phasing and schedules, interprets municipality and regulatory codes. Mr. Slodowick has also performed construction administration services including project scheduling and quality control for earthwork construction and erosion and sedimentation control. He received his AD in Drafting and Design from ITT Technical Institute.

PROJECT EXPERIENCE

LANDSLIDE INVESTIGATION AND ABATEMENT EXPERIENCE

Project Profile

White Avenue Slip Project

City of Morgantown, Monongalia County, West Virginia

Project Team:
GAI Consultants

EnviroProbe Integrated Solutions

Services:
Geotechnical and Geological Investigations

Mitigation Alternatives

Permitting Services

Preparing Construction Plan, Specifications, and Bid Documents

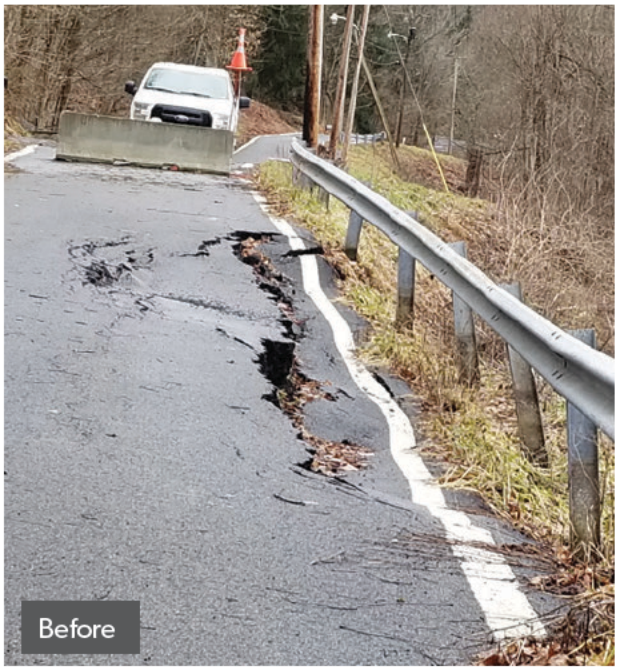
On-site Construction Inspection and Administration Services

Client:
City of Morgantown

Completion Date:
June 2021

Project Management:
Charles Straley
Principal-in-Charge
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com

Michael Holbert
Project Manager
GAI Consultants, Inc.
107A Cambridge Place
Bridgeport, WV 26330
T. 304.933.5228
E. m.holbert@
gaiconsultants.com



The Team of GAI and EnviroProbe provided engineering services to assist the City of Morgantown with the stabilization of the landslide along White Avenue in Morgantown, West Virginia. This project included a subsurface exploration program to obtain geotechnical data for the project and to provide recommendations and construction drawings for site stabilization. Specific tasks performed for this project included:

- Reviewing site geologic and mining conditions along the available historic topographic maps and aerial photos;
- Performing a site reconnaissance;
- Performing a geotechnical subsurface exploration consisting of three test borings;
- Conducting laboratory testing of select soil and rock samples;
- Developing alternatives to stabilize/remediate the landslide;
- Developing construction drawings of the preferred alternative; and
- Performing on-site construction inspection and administration services during the construction phase.

Key personnel included: Charles Straley - Principal-in-Charge and Lead Geotechnical Engineer; Michael Holbert - Project Manager; Keith Schoon - Geotechnical Engineering; Rich Ruffolo - Geological Manager; Rachel McCoy - Roadway Design.

gai consultants

Project Profile

Latrobe (Gibson) Landslide Emergency Evaluation

Latrobe, Logan County, West Virginia

Project Team:
GAI Consultants

Services:
Subsurface Investigation
Site Reconnaissance
Survey
Alternative Evaluation
Permitting Services
Construction Drawings and Specifications

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mined Lands

Completion Date:
2005

Project Manager:
Bryce Good
GAI Consultants, Inc.
200 Abington Exec. Park, Suite 201
Clarks Summit, PA 18411
T. 570.290.1920
E. b.good@gaiconsultants.com

During Slope Reduction

After Slope Reduction

GAI responded to an urgent request from the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands, to evaluate an unstable landslide area situated above private residences upstream of Man along Buffalo Creek near Latrobe, West Virginia. The landslide, caused by abandoned coal mining operations, had developed scarps, cracks, rolling, and seepage through the face that was encroaching on the property.

GAI was asked to reduce the slopes, eliminate the instability, and develop provisions for controlling the drainage. An alternative analysis was conducted based on the records research, subsurface investigation and stability analysis. The alternatives that were evaluated included: primary rock buttress, lateral drainage controls, retaining wall system, and complete removal of slide material.

The final design included the complete removal of the slide material, an emergency United States Army Corps of Engineers permit for a valley fill, and various drainage control structures.

Key personnel included: Charles Straley - Lead Geotechnical Engineer; and Terry Queen - Lead Construction Coordinator.

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Project Profile

Project Team:
GAI Consultants

Services:
Geological Investigations

Landslide Restoration Plan

Site Mapping

Field Survey

Drainage Channel Design

Permitting Services

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands

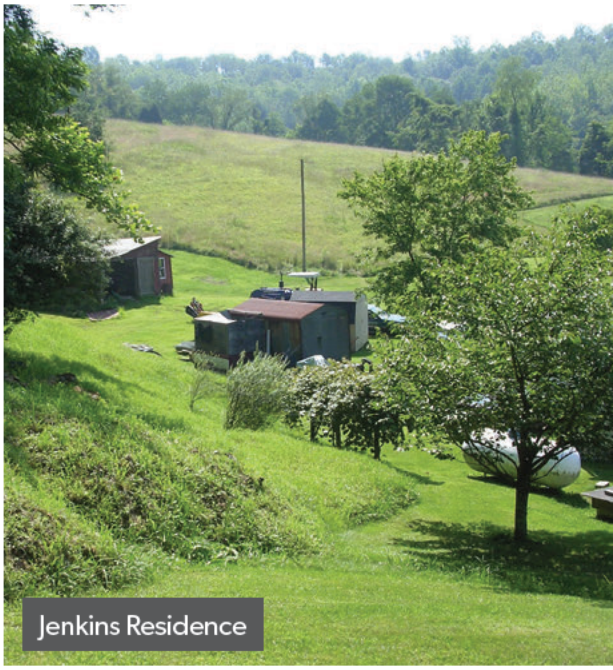
Completion Date:
2009

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com

Duck Creek (Jenkins) Landslide

Harrison County, West Virginia

Encroaching Landslide



Jenkins Residence

GAI provided engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Land, for the Duck Creek (Jenkins) Landslide, located in Harrison County, West Virginia. The project's purpose was to prepare a restoration plan for a landslide located within the Duck Creek watershed that was encroaching upon the Jenkins residence. This seven-acre landslide was threatening the home, water well, and propane tank.

GAI performed site mapping and a detailed geotechnical exploration and developed restoration designs for the landslide. In addition, an existing long culvert was replaced and a rock channel was designed to protect the residence from future 25-year storm events. Utilizing an innovative and sustainable design approach, GAI was able to minimize stream impacts so only a basic nationwide United States Army Corps of Engineers permit was required. The design did not require simple excavation and called for spoil to be placed in an adjacent area where streams would not be impacted.

GAI identified that the spoil causing the landslide came from a pre-law (prior to 1977) surface mine located uphill from the Jenkins residence. Our proactive approach included investigating an existing surface mine in the same vicinity. The mine owner identified a localized spot within their mine reclamation area that was having drainage issues and agreed to the placement of the landslide spoil at that location.

GAI's proactive approach to the landslide identified an existing mine and linked the landslide to mine spoil. GAI's design will protect the Jenkins residence without impacting ephemeral streams, improve an adjacent mine reclamation area, and replace the landslide material to an elevation close to where it originated years ago.

Key personnel included: Charles Straley - Project Manager; and Michael Doyle - Design Lead.

gai consultants

Project Profile

Wintersdale Road Landslide Repairs Project

Wayne County, Pennsylvania

Project Team:
GAI Consultants

Services:
Geotechnical Guidance for Design of Landslide Remediation

Permissible Treatment Options

Remediation Design Recommendations

Subsurface Exploration

Laboratory Testing

Wetland Delineation and Stream Identification Report

Permitting Services

Conceptual Design Drawings and Calculations

Client:
PennDOT Engineering District 4-0

Completion Date:
2017

Project Manager:
Richard Krajcovic, Jr.
GAI Consultants, Inc.
600 Cranberry Woods Drive, Suite 400
Cranberry Township, PA 16066
T. 412.654.4941
E. r.krajcovic@gaiconsultants.com

This project was part of the overall Wayne County Landslide Project that GAI worked on for the PennDOT, District 4-0. The project included stabilization and reconstruction of the damaged roadway and replacement rail in the vicinity of several landslides within Wayne County, Pennsylvania. This project focused on remediation of landslides along Wintersdale Road, SR 4014, Section SLD (SR4014-SLD), between the roadway and the West Branch of the Delaware River in Buckingham Township, Wayne County, Pennsylvania.

The landslide activity caused differential cracking of the pavement and leaning of guide rails and posts along Wintersdale Road. GAI's scope of work involved compiling geotechnical data for the project and providing guidance for the design of landslide remediation. Geotechnical data obtained for this project was intended to identify feasible methods of landslide remediation appropriate for this project. The remediation methods were discussed with the District during a pro-team meeting held at the District offices. The method of slide remediation treatment preferred by the District included stabilization of the existing roadway embankment with vertical drilled shafts (caissons), including a reinforced concrete cap to tie the shafts together and a "knee wall" to accomplish the edge of the roadway and guiderail.

Key personnel included: Don Splitstone - Lead Geotechnical Engineer; and Rich Ruffolo - Lead Geologist.

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HIGHWALL EXPERIENCE

Project Profile

Laurel Point (Saylor Run Road Slip) Project

Laurel Point, Monongalia County, West Virginia

Project Team:
GAI Consultants

Services:
Geotechnical and Geological Investigations
Subsurface Investigation
Drilling of Borings
Regrading and Drainage Controls for Refuse Piles
Engineering Analysis
Streambank Stabilization
Access Road Construction
Construction Drawings and Specifications
Remediation of Slip
Revegetation Plan
Permitting Services

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation

Completion Date:
2013

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com

Laurel Point Slip Area | Exposed Highwall

GAI provided engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation for the Laurel Point (Saylor Run Road Slip) Project, located near Laurel Point, Monongalia County, West Virginia. The project consisted of two sites with areas of exposed coal refuse, including collapsed and open deep mine portals, dangerous highwalls, and mine drainage. A hillside slip occurred at one of the sites, which made West Virginia County Route 19/4 (Saylor Run Road) unstable. The slip along Saylor Run Road was evaluated by GAI and was remediated by removing the material and constructing an engineered fill with a toe and bonding bench system.

GAI's scope included providing stabilization for Saylor Run Road, regrading and providing proper drainage controls for the refuse piles and installing mine seals and bat gates in the open mine portals. Additionally, Saylor Run Road had a bridge crossing over a stream. The slope of the road had experienced sliding into the stream. In order to get materials and equipment to the site, temporary supports were added to the bridge. Streambank stabilization was also provided along the toe of the refuse along the stream to protect it from erosion. For access to the site, access roads were constructed. GAI's scope also included revegetating the area.

Key personnel included: Charles Straley - Project Manager; Terry Queen - Construction Technician Lead; and Mike Doyle - Design Lead.

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Project Profile

Lynch Run Highwall #6 Reclamation and Design Services

Sand Fork, Gilmer County, West Virginia

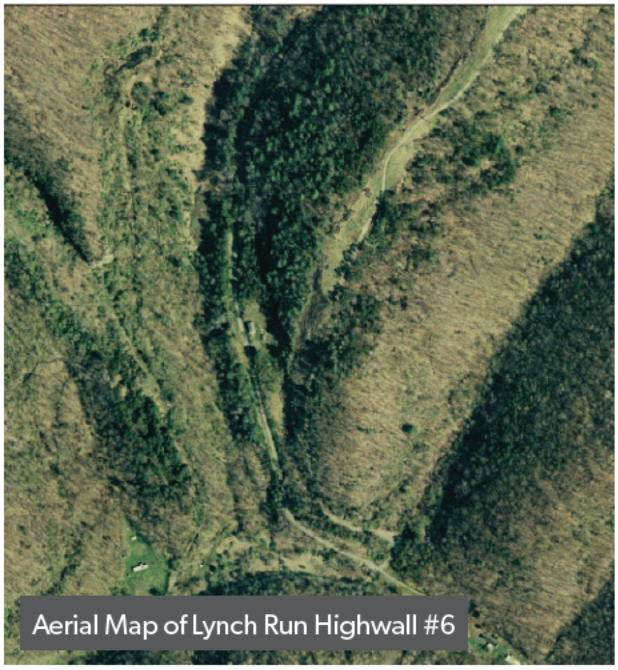
Project Team:
GAI Consultants

Services:
Highwall Reclamation
Subsurface Investigation
Mine Seals
Drainage
Debris Removal
Natural Stream Design
Revegetation
Permitting Services
Construction Drawings and Specifications
Construction Monitoring

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation

Completion Date:
2010

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com



Aerial Map of Lynch Run Highwall #6

Stream Refuse

GAI provided engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation for the Lynch Run Highwall #6 Project, located near Sand Fork, Gilmer County, West Virginia. The project consisted of two highwalls, six collapsed and draining portals, refuse located along a stream, and subsidence holes. GAI's scope of work involved providing backfilling the highwalls, seals for the collapsed portals, reclamation of the refuse pile, and controlled drainage, including natural stream design.

GAI developed a subsurface investigation plan to obtain information to evaluate site conditions to allow for a design of a detailed reclamation plan. Test pits were completed in some portal areas to determine the thickness of mine spoil for the reclamation of the highwalls. Access roads and test pit locations were reclaimed, seeded, and mulched upon completion.

A Section 404 permit from the United States Army Corps of Engineers and Section 401 Water Quality Certification from the West Virginia Department of Environmental Protection, Office of Water Resources, was required for potential impacts to the stream between the highwalls after the highwalls were backfilled. To make the site accessible for construction equipment and to tie up-gradient stormwater into this stream, a regional Abandoned Mine Lands permit from the United State Army Corps of Engineers was needed. GAI acted as the West Virginia Department of Environmental Protection's agent and met with representatives from both Agencies to discuss the conceptual design and specific permitting requirements.

GAI provided engineering plans, drawings, and specifications for outlined objectives. A detailed engineer's cost estimated was also developed. GAI attended the on-site pre-bid and pre-construction conferences. Periodic construction monitoring and associated office support was provided by GAI personnel.

Key personnel included: Charles Straley - Project Manager; and Terry Queen - Construction Technician Lead.

gai consultants

PORTAL EXPERIENCE

Project Profile

Amigo Portals Design Project

Raleigh County, West Virginia

Project Team:
GAI Consultants

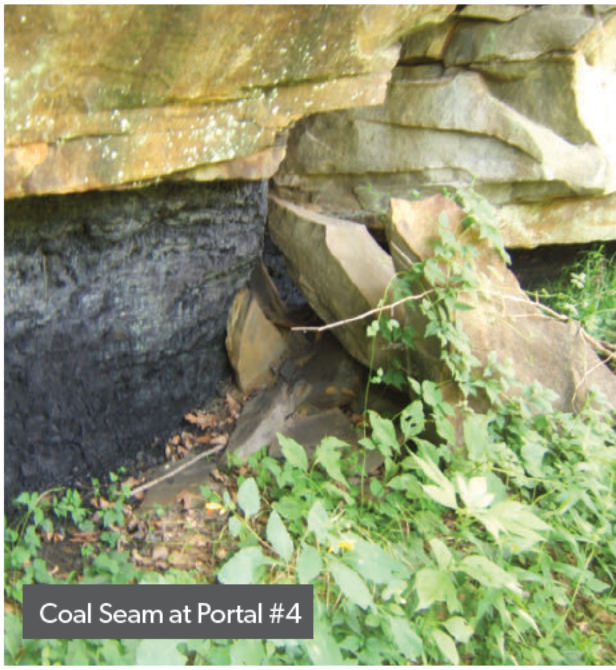
Services:
Records Review
Mine Portal Closures
Design of Drainage Conveyances
Installation of Mine Seals
Refuse Reclamation
Stream Bank Stabilization
Water Quality Sampling
Revegetation
Permitting Services
Construction Drawings and Specifications
Pre-Bid and Pre-Construction Meetings
Periodic Construction Monitoring
Quality Assurance/ Quality Control

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation

Completion Date:
2014

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com

Portal #10 Wet Seal



Coal Seam at Portal #4

GAI provided engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation for the Amigo Portals Project, located near Amigo, Raleigh County, West Virginia. The project included design of drainage conveyances, installation of mine seals, refuse reclamation, streambank stabilization, and revegetation of disturbed areas.

The project consisted of 18 mine portal closures, small areas of exposed refuse, and a streambank which needed stabilized. GAI's scope of work involved designing drainage conveyances, providing stream realignment and streambank stabilization with rock, streambank revegetation, installation of mine seals, refuse reclamation, water quality assessment, soil thickness and soil properties, opinion of probable cost, preparation of construction documents, and performing quality assurance and quality control.

Key personnel included: Charles Straley - Project Manager; and Terry Queen - Construction Technician Lead.

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Project Profile

Oldfield Branch (Hall) Drainage Project

Naugatuck, Mingo County, West Virginia

Project Team:
GAI Consultants

Services:
Records Review
Mine Portal Closures
Surveying
Retaining Wall Installation
Diversion Channel Construction
Subsurface Investigation
Laboratory Testing
Water Quality Testing
Mine Seals
Construction Drawings and Specifications
Construction Monitoring

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation

Completion Date:
2016

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com

Open Mine Portal at Oldfield Branch

GAI provided engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation for the Oldfield Branch (Hall) Drainage Project, located near Naugatuck, Mingo County, West Virginia. The project consisted of five mine portal closures, slip removal, and redi-rock retaining wall construction. The project also included upgrading access to the site and drainage control measures.

GAI's scope of work included providing subsurface investigations of the site to determine a mitigation plan for the landslide; laboratory testing; mine working conditions; sealing four mine portal closures; retaining wall installation; diversion channel construction; water quality testing; engineering plans, drawings, and specifications of the proposed design; engineers opinion of probable construction costs; permitting; pre-bid and pre-construction meetings; and periodic construction monitoring.

Key personnel included: Charles Straley - Project Manager; Terry Queen - Construction Technician Lead; and Mike Doyle - Design Lead.

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Project Profile

Wheatley Branch (Luthy) Portals Project

Chapmanville, Logan County, West Virginia

Project Team:
GAI Consultants

Services:
Records Review
Mine Portal Closures
Access Road Construction
Surveying
Drainage Control Measures
Subsurface Investigation
Laboratory Testing
Water Quality Testing
Mine Seals
Construction Drawings and Specifications
Construction Monitoring

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation

Completion Date:
2013

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com

Wheatley Branch Mine Portal Opening

GAI provided engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation for the Wheatley Branch (Luthy) Portals Project located near Chapmanville, Logan County, West Virginia. The project consisted of 29 mine portal closures and included upgrading access to the site and drainage control measures.

GAI's scope of work involved providing preliminary engineering and planning; access road construction; 29 mine seals; providing proper drainage control measures; records review; surveying and reconnaissance; subsurface investigation and laboratory testing; water quality testing; construction drawings and specifications; permitting and miscellaneous clearances; and periodic construction monitoring.

GAI also prepared and obtained a Stormwater National Pollutant Discharge Elimination System Permit; West Virginia Department of Transportation, Division of Highways MM-109 permits; and a non-reporting nationwide United States Army Corps of Engineers 404 permit.

Key personnel included: Charles Straley - Project Manager; and Terry Queen - Construction Technician Lead.

gai consultants

ACID MINE DRAINAGE EXPERIENCE

Project Profile

Cresson Acid Mine Drainage Treatment Design

Cresson, Cambria County, Pennsylvania

Project Team:
GAI Consultants

TetraTech

Services:
Mine Hydrology & Chemistry

Field Reconnaissance

Hydrology & Hydraulics Analysis

Water Quality Analysis

Mine Maps

AMD Treatment Evaluations

Treatability Study

Treatment Process Development

Site Selection & Layout

Alternative Energy Feasibility Studies

Geotechnical Study

Structural Engineering Design Services for Water the Treatment Plant

Client:
Pennsylvania Department of Environmental Protection, Bureau of Abandoned Mine Reclamation

Completion Date:
2016

Project Manager:
Derek Medved
GAI Consultants, Inc.
385 E. Waterfront Drive
Homestead, PA 15120
T. 412.399.5312
E. d.medved@gaiconsultants.com

Untreated AMD in Clearfield Creek Watershed

Cresson AMD Treatment Plant

GAI partnered with the Pennsylvania Department of Environmental Protection (PADEP), Bureau of Abandoned Mine Reclamation to provide treated acid mine drainage (AMD) to the West Branch of the Susquehanna River. The overall goal of this project was to restore fisheries by supplementing flow during low-flow periods with treated water from the mine pools. GAI performed preliminary and final design services for the project, including evaluating water quality impacts, determining an approach to routing mine pools, and evaluating low-flow requirements and water supply loss.

GAI's scope included selecting a location for the treatment plant and related infrastructure, evaluating treatment processes, and selecting a treatment process to mitigate population from the AMD and to restore water quality to the Clearfield Creek Watershed. Final design for the project included final development of the treatment process to meet the PADEP's effluent goals and layout of the treatment plant equipment to receive mine pool water and return sludge to the abandoned mines. GAI incorporated sustainable and green infrastructure into the facility design, site preparation and earthwork, and was responsible for foundation design for the treatment plant. GAI also prepared state and local permit applications and analyzed the effects of the effluent flow on the downstream tributaries.

GAI was also retained to provide comprehensive design services for the AMD Treatment Plant. The plant mitigates pollution from the discharge of three abandoned mines into the Clearfield Creek Watershed, as well as provides additional capacity during periods of reduced stream flow into the West Branch of the Susquehanna River. GAI's Structural Engineering Group was responsible for the design of the water containment structures, the plant control building, supporting framing of the pipes and open troughs that convey water and chemicals throughout the plant, support framing for the elevated access platform, and mat foundations for the pumps, pre-fabricated storage tanks, and a silo.

The AMD treatment facility is located in the Clearfield Creek Watershed, a major tributary of the West Branch Susquehanna River. The many benefits to the natural environment for Cambria County and the Town of Cresson included removing the orange and white staining caused by the AMD precipitate.

Key personnel included: Christopher Hennessey - Structural Engineering Lead; Joseph States - Structural Engineering Support; Adam Scheller - Civil Engineering Support; and Rich Ruffolo - Geological Engineering Lead.

gai consultants

Project Profile

Richard Mine Acid Mine Drainage Treatment

Richard, Monongalia County, West Virginia

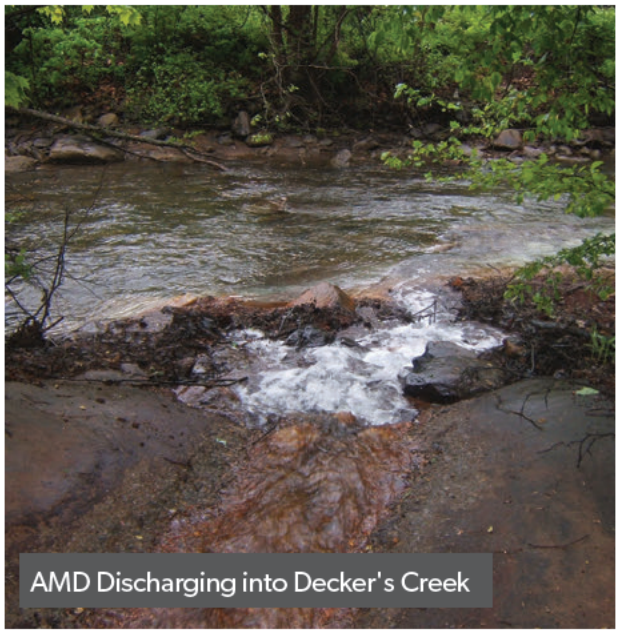
Project Team:
GAI Consultants

Services:
Literature Search
Site Reconnaissance
Data Collection
Mine Maps
Mine Hydrology
Acid Mine Drainage
Preliminary Feasibility Assessment
Hydrology and Hydraulics Analysis
Water Quality Analysis
Engineer's Opinion of Probable Cost

Client:
West Virginia Conservation Agency (WVCA), Monongahela Conservation District, and Natural Resources Conservation Service (NRCS)

Completion Date:
2009

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com



AMD Discharging into Decker's Creek

AMD Mixing/Treatment Pond

GAI partnered with the West Virginia Conservation Agency (WVCA), Monongahela Conservation District, and Natural Resources Conservation Service (NRCS) to correct the Acid Mine Drainage (AMD) discharge problem at the Richard Mine, near Morgantown, West Virginia. The overall goal of this project was to improve the water quality in Deckers Creek to restore the fish habitat in the lower five miles of the stream. The many benefits to the natural environment for Monongalia County and the City of Morgantown included removing the ugly orange and white staining caused by the AMD precipitate.

The Richard Mine AMD enters Deckers Creek about five miles upstream of the Monongahela River. Deckers Creek is a scenic stream that could become a great place for fly fishing and other recreational pursuits after the AMD sources are removed from the creek. Deckers Creek meanders through Morgantown, past Marilla Park, and through residential neighborhoods. The creek is visible and accessible to the population of the Morgantown area. The Deckers Creek Rail Trail parallels the creek all the way from Reedsville, West Virginia down to the Monongahela River in the Wharf District.

The project included five phases: 1) Analyze Problems and Compile Alternatives, 2) Develop Scope of Work, 3) Site Investigation, 4) Preliminary Design, and 5) Final Design. GAI was under contract to perform Phases 1 and 2.

In December 2006, GAI completed a Phase I Evaluation of AMD Problem Report which included bench scale testing. This report summarized the available data on the mine, mine discharge and other background data. In March 2007, GAI completed a Treatment Alternatives Report, which provided recommendations for the best ways to deal with the Richard Mine AMD. This report was an evaluation of several alternatives, passive, active and innovative, for the treatment of the AMD discharge. In addition, the "no build" alternative was also evaluated.

The best long-term solution was to convey the discharge to the Monongahela River where it can be diluted by the large volume of water with limited adverse effects to the river's water quality. The Morgantown Utility Board expressed interest in the conveyance of the AMD to the Monongahela River because the required piping could be combined with storm sewer improvements. This helped solve combined sewer overflow problems that had to be corrected to meet EPA mandates.

Key personnel: Charles Straley - Project Manager; Kerry Frech - Hydrology and Hydraulics; Terry Queen - Construction Technician Lead; and Mike Doyle - Lead Designer.

gai consultants

Project Profile

Eastern Wyoming County Public Service District Feasibility Study

Wyoming County, West Virginia

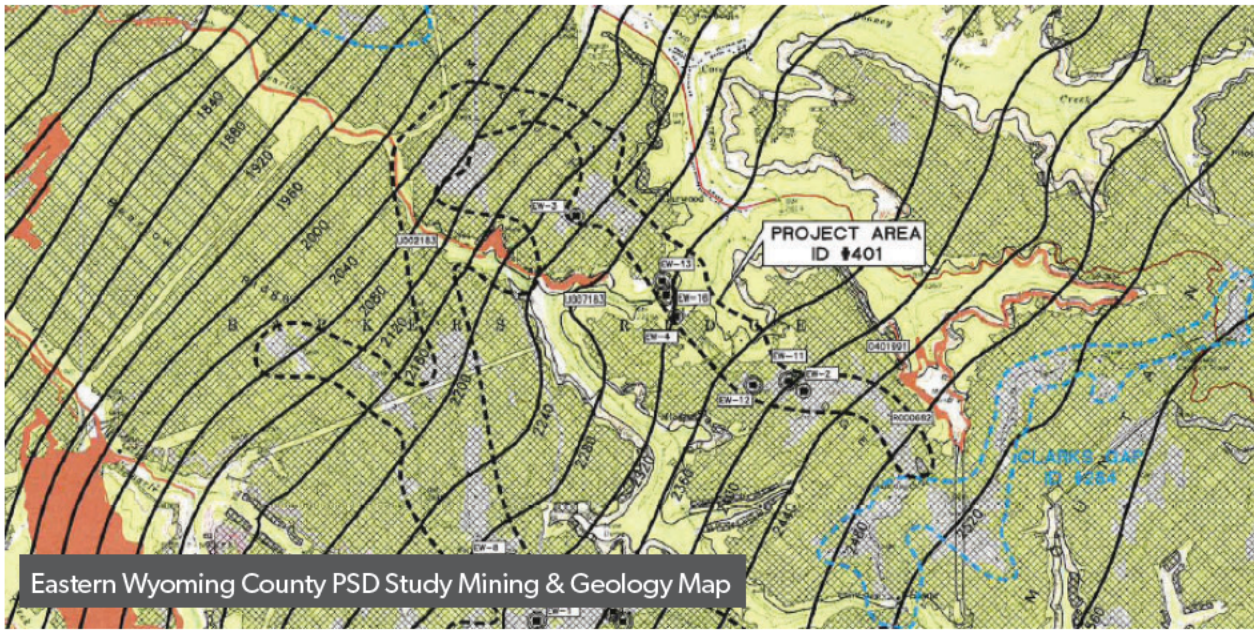
Project Team:
GAI Consultants (Prime)
ALS Environmental

Services:
Preliminary Investigation
Interviews
Records Search
Site Reconnaissance
Water Sampling and Analysis
Hydrogeology
Evaluation of Possible Impacting Sources
Water Supply Classification
Mitigation
Determination and Recommendations

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation

Completion Date:
2013

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com



Eastern Wyoming County PSD Study Mining & Geology Map

GAI provided the preliminary investigation of the Eastern Wyoming County Public Service District (PSD) Feasibility Study for the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation. The preliminary investigation was conducted to evaluate if the current water supply(ies) within the study area has potentially been degraded by pre-1977 mining. The preliminary investigation was to identify if the time period in which the mining occurred, the method of mining, and the potential affects of mining on the water supply(ies).

The study was performed by reviewing available geology and ground water hydrology records, reviewing available mining records, performing resident interviews, field reconnaissance, and performing laboratory water tests. The entire study area encompassed approximately 30 residences along County Routes 16/2, 16/4, 16/6, and 16/7. The responsible utility was the Eastern Wyoming County PSD.

Based on the findings of the preliminary investigation, completed by GAI, GAI received approval from the West Virginia Department of Environmental Protection to begin working on Phase II of this Project. Phase II of this project included performing a more detailed records search to obtain information on geology, mining activities and water quality and quantity in the study area based on pre-August 3, 1977 and post-August 3, 1977 mining activities; additional interviews with local residents and government officials; and performing an evaluation on the possible sources of impacts on the water supplies and determination of percentage of water supply sources affected by pre-August 3, 1977 mining operations.

Based on the investigations, GAI determined that there was extensive pre-1977 surface and deep coal mining within and near the boundary of the study area; extensive surface and deep coal mining exists adjacent to the study area; most of the residents interviewed within the study area indicated that they have no or limited water supplies; and that there is a probability (due to the surrounding coal mining) that the water resources in the study area have been depleted by pre-1977 mining operations.

GAI suggested that the most feasible long term solution to the water problems in the study area is believed to be the extension of the Eastern Wyoming PSD's public water system into the study area and the adjacent Clark's Gap study area.

Key personnel: Charles Straley - Project Manager; and Mike Doyle - Lead Designer.

gai consultants

MINE DRAINAGE DESIGN EXPERIENCE

Project Profile

Greystone Mine Drainage Design Project

Monongalia County, West Virginia

Project Team:
GAI Consultants

Services:
Design of Drains and Drainage Structures

Installation of Mine Drainage Structures

Site Reclamation

Erosion and Sedimentation Control

Disposal of Mine-Related Debris

Revegetation

Permitting Services

Construction Drawings and Specifications

Access Road Construction

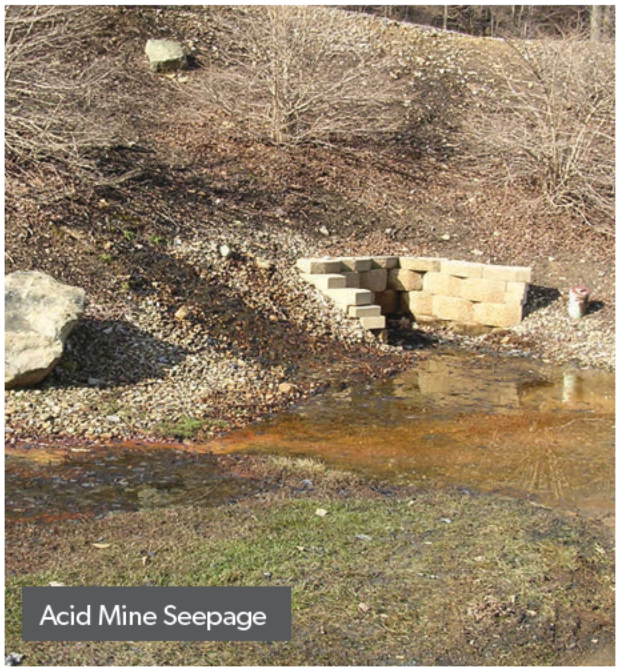
Periodic Construction Monitoring

Quality Assurance/ Quality Control

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation

Completion Date:
2011

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com



Acid Mine Seepage

Installed Drainage Structure

GAI provided engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation for the Greystone Mine Drainage Project, located near Cheat Lake, Monongalia County, West Virginia. Acid Mine Drainage seepage from the highwall benches is causing hot spots in lawns and driveways and has caused flooding during heavy precipitation events.

GAI's scope of work involved providing collection of mine drainage through underdrains, a conveyance drainage system, and site reclamation. The project included installation of temporary shoring and bracing to protect workers; erosion and sedimentation control; proper removal and disposal of mining-related debris and other trash and debris; installation of mine drainage structures; drains and other drainage structures; regrading and revegetating disturbed areas; access road construction; highwall elimination; and cleanup of the areas upon completion of the work. GAI furnished all supervision, labor, plants, power, equipment, and performed all operations in connection with this project.

Key personnel included: Charles Straley - Project Manager; and Terry Queen - Construction Technician Lead.

gai consultants

Project Profile

Route 60 Drainage Design Project

Smithers, Fayette County, West Virginia

Project Team:
GAI Consultants

Services:
Design of Drains and Drainage Structures

Installation of Mine Drainage Structures

Site Reclamation

Erosion and Sedimentation Control

Disposal of Mine-Related Debris

Revegetation

Permitting Services

Construction Drawings and Specifications

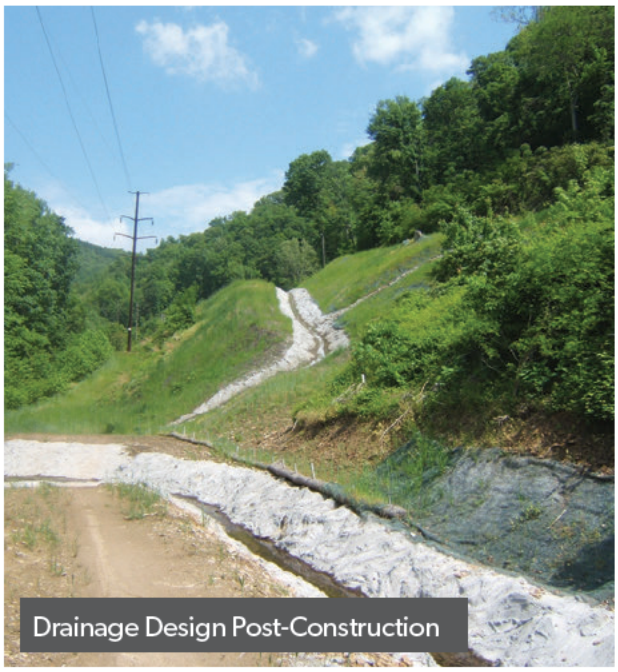
Access Road Construction

Quality Assurance/ Quality Control

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation

Completion Date:
2012

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com



Drainage Design Post-Construction

Drainage Discharging into a Stormwater System

GAI provided engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation for the Route 60 Drainage Project, located along U.S. Route 60 in Smithers, Fayette County, West Virginia. The project was located on a hillside slope above numerous businesses and a residential area and consisted of at least seven collapsed and draining portals. Mine drainage has been saturating the area and impacting the businesses and there was also a concern of a potential blowout.

The goal of the project was to provide reclamation for the mine portals and to provide proper drainage. GAI's approach for the control of the portal drainage was to provide mine seals with drainage pipes that discharged into formed channels and a stormwater system that would safely convey the water around the businesses located below the hillside.

GAI's scope of work included installation of temporary shoring and bracing to protect workers; erosion and sedimentation control; installation of mine seals, drains, and other drainage structures; permitting; temporary access roads; quality assurance/quality control; and cleanup of areas upon completion of work. GAI furnished all supervision, labor, plants, power, equipment, and performed all operations in connection with this project.

Key personnel included: Charles Straley - Project Manager.

gai consultants

GRADING DESIGN EXPERIENCE

Project Profile

Larry Frederick Highwall and Refuse Project

Lumberport, Harrison County, West Virginia

Project Team:
GAI Consultants

Services:
Regrading and Soil Covering of the Refuse Pile

Design of Drains and Drainage Structures

Installation of Mine Drainage Structures

Site Reclamation

Erosion and Sedimentation Control

Disposal of Mine-Related Debris

Revegetation

Permitting Services

Construction Drawings and Specifications

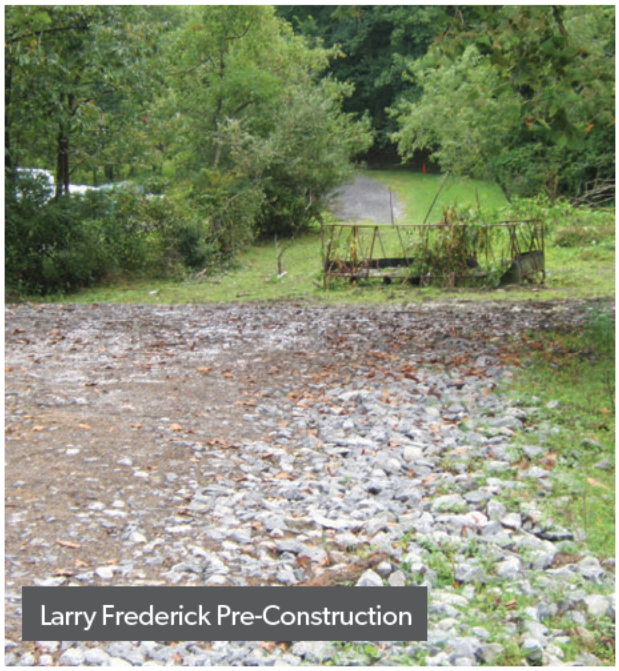
Access Road Construction

Quality Assurance/ Quality Control

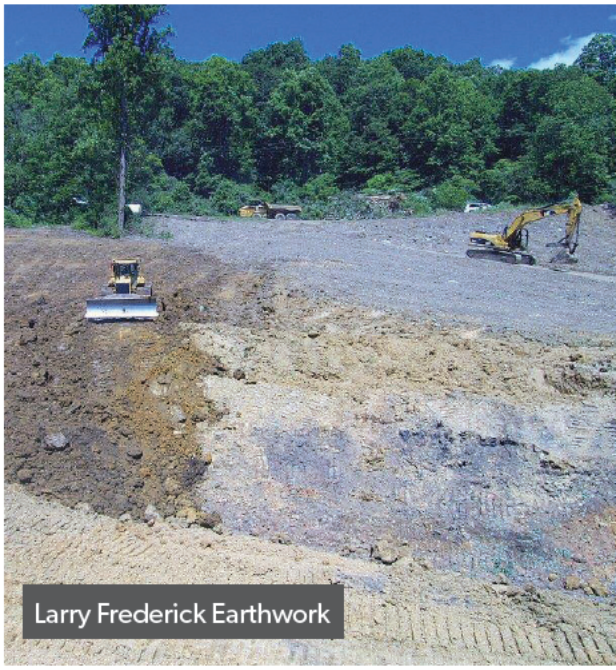
Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation

Completion Date:
2017

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com



Larry Frederick Pre-Construction



Larry Frederick Earthwork

GAI provided engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation for the Larry Frederick Highwall and Refuse Project, located near Lumberport, Harrison County, West Virginia. The project consists of two mine portal closures, exposed refuse pile, residential waste, and a poorly vegetated bench area.

The goal of the project included regrading and soil covering the refuse pile, constructing access roads, sealing the mine portals, refuse disposal, soil enhancement for the bench, providing proper drainage control measures, and revegetating the areas.

GAI's scope of work included installation of temporary shoring and bracing to protect workers; erosion and sedimentation control; installation of mine seals, drains, and other drainage structures; permitting; upgrading access roads and revegetating disturbed areas; quality assurance/quality control; and cleanup of areas upon completion of work. GAI furnished all supervision, labor, plants, power, equipment, and performed all operations in connection with this project.

Key personnel included: Charles Straley - Project Manager; and Terry Queen - Construction Technician Lead.

gai consultants

Project Profile

Reynoldsville Refuse Design

Reynoldsville, Harrison County, West Virginia

Project Team:
GAI Consultants

Services:
Regrading and Soil Covering of the Refuse Pile

Design of Drains and Drainage Structures

Installation of Mine Drainage Structures

Site Reclamation

Erosion and Sedimentation Control

Disposal of Mine-Related Debris

Revegetation

Permitting Services

Construction Drawings and Specifications

Access Road Construction

Traffic Control

Quality Assurance/ Quality Control

Client:
West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation

Completion Date:
2012

Project Manager:
Charles Straley
GAI Consultants, Inc.
500 Lee Street East,
Suite 700
Charleston, WV 26330
T. 304.541.0854
E. c.straley@
gaiconsultants.com

Reynoldsville Mine Refuse Site

Reynoldsville Site Post Construction

GAI provided engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation for the Reynoldsville Refuse Design Project, located near Reynoldsville, Harrison County, West Virginia. The goal of the project was to provide regrading and soil covering of the refuse pile, constructing access roads, providing streambank stabilization, sealing the mine portals, providing proper drainage control measures, and revegetating the areas.

GAI's scope of work included design for construction of mine portal seals, bat gates, regrading and soil covering refuse areas, subsurface drainage collection, providing proper drainage control measures, providing streambank stabilization, installation of temporary shoring and bracing to protect workers, erosion and sedimentation control, removal and disposal of mining-related debris, installation of mine drainage structures, regrading and revegetating disturbed areas, installation of mine seals, permitting, construct and maintain temporary access roads, traffic control, and quality assurance/quality control. GAI furnished all supervision, labor, plants, power, equipment, and performed all operations in connection with this project.

Key personnel included: Charles Straley - Project Manager; and Terry Queen - Construction Technician Lead.

gai consultants

REFERENCES

Table 1 contains references of GAI clients served in recent years by one or more members of the designated Project Team. The table also includes a brief description of the scope of services provided.

TABLE 1 - REFERENCES & SERVICES PROVIDED

Client Reference	Project Name, Location, Dates, and Scope of Work
Jonathan Holbert Southern Region Design Engineer WVDEP, Abandoned Mine Lands & Reclamation Phone: 304.926.0499, ext. 41182 Email: jonathan.r.holbert@wv.gov	▪ Eastern Wyoming County PSD Feasibility Study ▪ Eastern Wyoming County, West Virginia ▪ Completed: 2013 ▪ Scope of Work: Preliminary Investigation; Interviews; Records Search; Site Reconnaissance; Water Sampling and Analysis; Hydrogeology; Evaluation of Possible Impacting Sources; Water Supply Classification; Mitigation; Determination and Recommendations
Emily Muzzarelli Assistant City Manager City of Morgantown Phone: 304.284.7406 Email: emuzzarelli@morgantownwv.gov	▪ White Avenue Slip Project ▪ City of Morgantown, Monongalia County, West Virginia ▪ Completed: June 2021 ▪ Scope of Work: Geotechnical and Geological Investigations; Mitigation Alternatives; Preparing Construction Plan, Specifications, and Bid Documents; On-site Construction Inspection and Administration Services
Doug Smith Assistant General Manager and Chief Engineer Morgantown Utility Board Phone: 304.292.8443 Email: dsmith@mub.org	▪ Caperton Trail Landslide Project ▪ City of Morgantown, Monongalia County, West Virginia ▪ Completed: 2011 ▪ Scope of Work: Geotechnical and Geological Investigation; Subsurface Investigation; Drilling of Borings; Installation and Monitoring of Slope inclinometers; Engineering Analysis; Preparation of Recommendations for Remediation

PROJECT MANAGEMENT PLAN, QUALITY, AND COST CONTROL

PROJECT UNDERSTANDING

GAI understands that the successful full-service design firm is to be licensed in West Virginia and have a successful track record of designing similar projects. Design Group C Projects are all located in Randolph and Barbour Counties, West Virginia and include the following Projects:

Project 1: Flatbush Highwall is located off Country Route 151 between Ellamore and Norton in Randolph County, West Virginia, and is for the reclamation of the existing highwall and the previously constructed AMD area.

Project 2: Fords Run Drainage is located off Country Route 24/2 east of Philippi in Barbour County, West Virginia, and is for the repair and replacement of existing AML reclamation features and facilities and mitigation of failing structures and grading.

GAI understands that preliminary design documents will be due 90 days from the issuance of the Purchase Order unless specified otherwise during the Pre-Design Meeting. GAI understands that we will be responsible for the following design components for each Project, as applicable:

- Access or accesses, as required;
- Geotechnical investigation and analyses;
- Landslide stabilization(s);
- Hydrologic and hydraulic analyses;
- Clear and grub affected areas;
- Regrade, as necessary;
- Install drainage channels, underdrains, and/or other controls to safely convey water off-site;
- Condition and revegetate all disturbed areas; and
- Obtain required permits as determined at the Pre-Design Meeting.

GAI understands that Project goals and objectives include but are not limited to that as listed below:

1. Develop construction plans and technical specifications to stabilize the landslide, and design new drainage features and structures if the existing structures are unable to be repaired or replaced.
2. Design plans and develop specifications to control any associated water with the site.
3. Design plans and develop specifications for limits of disturbance, stormwater control, and erosion and sedimentation prevention. All disturbed areas are to be regraded and revegetated.
4. Design plans and develop specifications for all conditions encountered on the Project sites.

PROJECT APPROACH AND METHODOLOGY

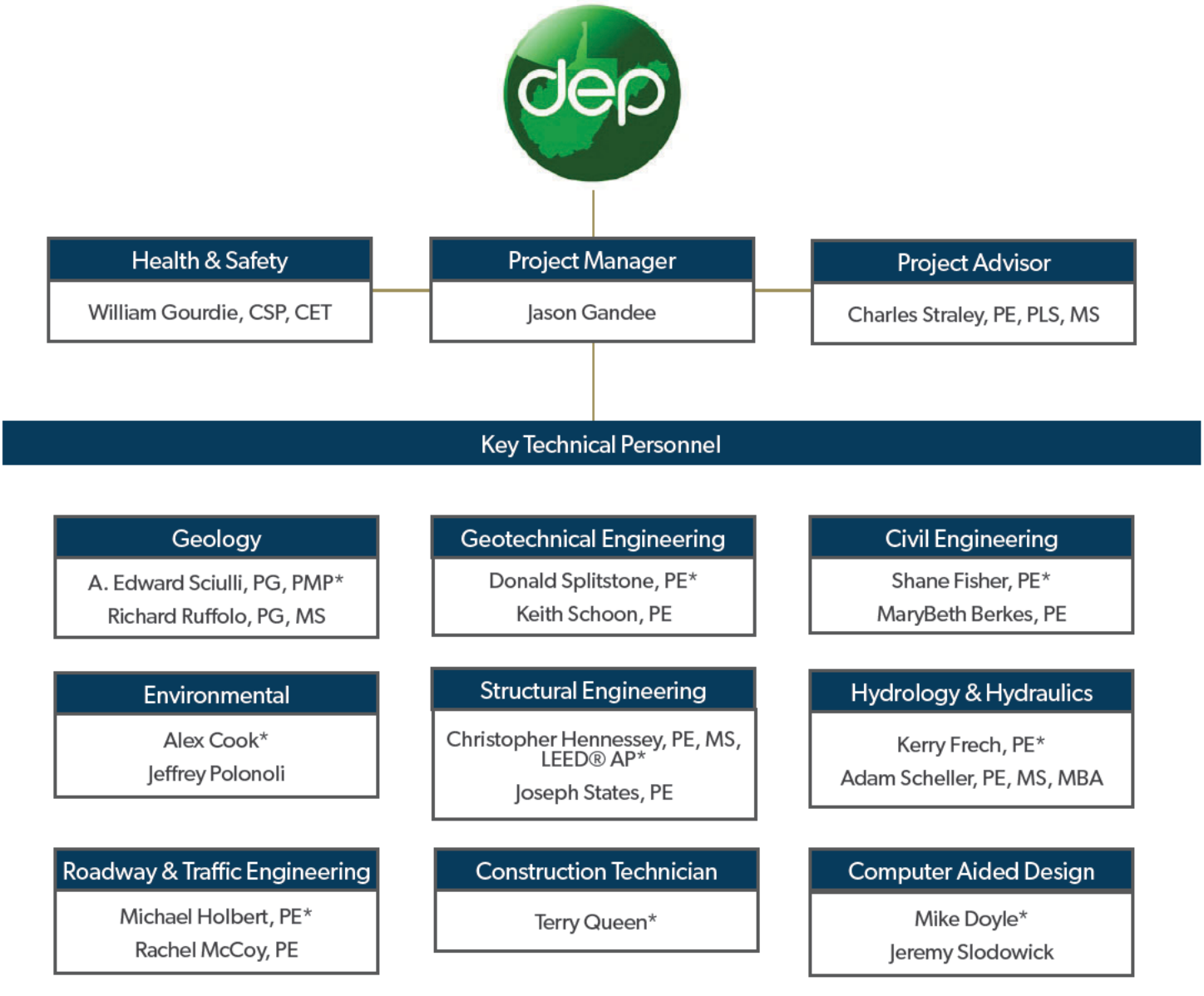
GAI strives to perform as an extension of our Client's staff with a service-oriented approach. Our approach is focused on regular and effective communication and to keep the WVDEP informed of progress and to address Project challenges as they arise. GAI has set forth a number of communication, management, and monitoring systems to handle the Projects and we look forward to implementing them on WVDEP's behalf. GAI's Project Management Plan (PMP) will be used to manage and communicate the Project scope, schedule, and budget to promote successful implementation of the Projects. This PMP includes: Project Team Coordination and Scheduling, Quality Assurance/ Quality Control, Data Management, and Invoice Management.

GAI's proposed Project Organizational Chart is presented in **Figure 1**.

Project Management Plan

GAI will manage these Projects out of our Charleston, West Virginia office, a 10-minute drive of WVDEP-DLR-AML's Headquarters, located in Downtown Charleston, West Virginia. Engineering design work will be performed out of GAI's offices in Charleston, West Virginia; Bridgeport, West Virginia; Pittsburgh, Pennsylvania; and Cranberry Township, Pennsylvania, as required. GAI's offices in Charleston and Bridgeport will allow for ready access to the Project areas. GAI's Bridgeport Office is also conveniently located, as it is in the same complex as the WVDEP-DLR-AML's Bridgeport Office. GAI's Charleston Office is located within a 10-minute drive of WVDEP-DLR-AML's Headquarters, located in Downtown Charleston, West Virginia.

FIGURE 1 - PROJECT ORGANIZATIONAL CHART



Notes

*Designated Discipline Lead

Project Management will be provided by Mr. Jason Gandee who works out of GAI's Charleston Office. He will be responsible for the day-to-day management and performance of these Projects. He has previously worked on over 25 AML projects in West Virginia. Mr. Gandee will review the WVDEP work directive and prepare the Scope of Work and Cost Proposal. A written Proposal, including a detailed cost estimate, (man hours and expenses associated with the Project) will then be prepared and submitted to the WVDEP for review. Upon WVDEP's approval of GAI's Proposal, Mr. Gandee will arrange for the start of the work. Included will be project staffing, arrangement and detailing of the scope of services to be provided by GAI, and review of the Project budget and schedule. He will generally supervise the work in progress and review work products at intermediate points prior to the submittal to the WVDEP and will be responsible for maintaining liaison with the WVDEP Project Manager, including Project status reports, as required.

Mr. Charles Straley, PE, PLS, will act as the Project Advisor, where he will provide his expertise in AML design projects and in the areas of geotechnical engineering, subsurface investigations, mining, soil and rock mechanics, subsidence exploration, foundation and embankment design, slope stability and landslide engineering, acid mine drainage, water feasibility studies, and material construction specifications. Mr. Straley has managed or provided engineering design services for over 95 AML projects for the WVDEP.

GAI's large, full-service, experienced staff permits us to respond quickly, providing flexibility, and includes high level input to the Project's staff from in-house experts. GAI's method of staffing projects, as evidenced by our performance on prior projects for the WVDEP, is to assign a small team with total responsibility for completion of the work to the Client's satisfaction and budget. Should it be necessary, the GAI Team can draw on the expertise available within GAI's 700+ personnel in one of our 25 office locations.

Project Team Coordination and Scheduling

Project Initiation

GAI will meet with WVDEP personnel and appropriate Project stakeholders for a kick-off meeting to review the field safety and property access protocols, schedule, points of contact, and coordination and communication systems.

Project Communication

GAI will participate in routine (typically bi-weekly) conference calls with WVDEP and Project stakeholders, as required. GAI's Project Manager can lead the calls if requested. GAI will provide a conference call phone number to support the conference calls, which can be conducted using Microsoft Teams, which will allow sharing of the desktop to display data for discussion. During the calls, GAI will update the WVDEP regarding the status of the Project and to identify information needs or anything that may affect the Project schedule and/or cost.

Project Scheduling

GAI uses either Primavera, Microsoft Project, or Excel scheduling spreadsheets for critical method scheduling, which tracks deliverables and keeps the project on time and on budget. GAI will work with the WVDEP to build a baseline schedule. The baseline schedule is then updated on a periodic basis, typically weekly or monthly, depending on the pace of the Project.

Quality Assurance/Quality Control

Project Controls Group

GAI has established a Project Controls group to monitor cost and manage reporting. This group utilizes Deltek Vision v7.6, GAI's enterprise management software, to monitor the cost of each project. Scope and budget must be agreed to prior to the task budget entry in Deltek. The Task Budget creation is the end result of the development and distribution of final scope, fee, budget, and schedule with the Project Team. The Task Budget establishes the base line to monitor and measure project progress and financial performance. Task Budget creation includes: Obtaining external scope, budget, schedule, and fee commitments; and distribution of labor, subconsultant/subcontractor fees, and direct expenses for the purposes of establishing baseline or supplemental task budgets using the Deltek Project Planning Module.

Quality Management System

GAI understands the importance of providing our clients with on-time, cost-effective, high-quality professional services. The continued success of our firm is directly related to our ability to continue to meet the cost, quality, and schedule requirements of our projects. We achieve this goal through our experienced professional staff and by utilizing our QMS. GAI's QMS is based upon a continuously improving project delivery strategy that reflects our client's needs and utilizes current technology. The Project Delivery System provides the quality assurance and quality control functions from project inception through project closeout. The Project Delivery System incorporates processes and procedures that describe how professional services are planned, executed, checked, verified, and delivered to our clients. The system is flexible so that it allows GAI to meet the needs of individual clients.

Data Management

GAI will store digital information on corporate servers, including Microsoft Office documents, GIS shape files, and PDFs of mapping. GAI will provide a means to share large files with the WVDEP through the use of a password protected FX site or by providing direct links to files on the server through the use of GAI's Newforma or SharePoint System.

Invoice Management

To track and manage the Project budgets, GAI proposes to use a Cost Tracking Spreadsheet. GAI will update the Cost Tracking Spreadsheet on a weekly basis, which includes the awarded value for each task, approved change order amounts, current invoice amount, amount invoiced to date, remaining amounts approved, and physical percent complete.

To manage and document the Projects' scope, if activities are determined to be required that are not part of this scope (change orders), GAI will provide work plans to be approved. GAI will incorporate these change orders into the Cost Tracking Spreadsheet as they are approved. GAI's proposed routine conference calls will include a review of the Project budget and change orders, as needed.

REQUIRED AND SIGNED FORMS

GAI has included the Solicitation Document No. CEOI 0313 DEP2200000004, dated 2021-08-18, in its entirety, signed and notarized, where applicable, as **Appendix C**. There was no Addendum issued for Group C Projects.

GAI's signed AML Consultant Qualification Questionnaire is provided in **Appendix D**.

GAI's signed AML Contractor Information (AVS) Form is provided in **Appendix E**.

ASSUMPTIONS AND UNDERSTANDINGS

GAI's Scope of Services, Schedule, and Compensation as set forth in this Proposal have been prepared based on the following assumptions and understandings:

1. Survey will be conducted from the public Right-of-Way.
2. Client will give GAI prompt notice whenever it observes or otherwise becomes aware of any development that affects the scope or timing of GAI's performance.
3. Client will examine and provide comments and/or decisions with respect to any GAI interim or final deliverables within a period mutually agreed upon.
4. GAI will discuss and formalize the final schedule with the WVDEP upon Authorization to Proceed.

HEALTH AND SAFETY

GAI believes all employees should go home in the evening just as healthy and safe as they were when they arrived in the morning. GAI is committed to a culture of safety. At GAI, project tasks are completed in accordance with all applicable state and federal regulatory requirements including Occupational Safety and Health Administration (OSHA) standards, client-specific health and safety requirements, and GAI policies and procedures. GAI employees are routinely provided health and safety training, particularly OSHA 10-hour and 30-hour construction awareness and/or SafeLand Training. New employees are introduced to GAI Health and Safety policies during employee orientation. GAI also provides OSHA 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training and the eight-hour HAZWOPER refresher classes as needed.

Health and Safety Plans are required to be developed and implemented whenever project staff are expected to conduct fieldwork, as well as whenever site reconnaissance activities expose employees to hazards that must be controlled. The purpose of the Health and Safety Plan is to identify, investigate, and mitigate potential hazards and unsafe conditions en route to/from and at the project site. The Health & Safety Plan defines the specific project tasks and appropriate control measures for safe completion of project tasks through the use of a Job Hazard Safety Analysis process. It also contains information about project personnel; required personal protective equipment; mandatory project staff training; and emergency response information and procedures. This procedure applies to all GAI staff as well as GAI subcontractors.

GAI's Health & Safety Director, William Gourdie, CSP, CET, with over 35 years of experience, is responsible for spearheading initiatives that help GAI comply with all applicable health, safety, and environmental regulations; client requirements; and corporate policies and procedures in order to maintain the safest possible working conditions for all employees. He embodies GAI's commitment to safety by coordinating the development, implementation, and continuous improvement of the company's Health & Safety Program to enhance its effectiveness and improve performance results.

COVID-19 Response Plan

GAI's COVID-19 Committee meets regularly, monitoring conditions. Our goal is to adapt the way we work to help keep our clients, stakeholders, staff, and public safe by incorporating best practices put forth by the Centers for Disease Control (CDC) and other qualified entities. GAI has developed a COVID-19 Response Plan with actions initiated to mitigate the risk of exposure to our employees, subcontractors, and clients, with the goal of maintaining business continuity. GAI has always held safety as the most important of our core values. We are committed and focused on the health and well-being of our employees, our customers, and the communities where we do business.

CLOSING

The GAI Team is excited about the opportunity to work with the WVDEP on these Projects, and we look forward to speaking with you about our experience working on and designing for WVDEP-DLR-AML projects in West Virginia. We believe that we can be a strong partner with the WVDEP, working together towards the success of these and future projects.

Should you have any questions or would like to speak with us about our EOI or services, please feel free to contact Project Manager, Jason Gandee at 681.245.6484, or Project Advisor, Charles Straley, at 681.245.8866.

Design Group C Project Contacts

Jason Gandee
Project Manager/Senior Project Engineer
GAI Consultants, Inc.
T. 681.245.6484
E. J.Gandee@gaiconsultants.com

Charles Straley, PE, PLS, MS
Project Advisor/Senior Engineering Manager
GAI Consultants, Inc.
T. 681.245.8866
E. C.Straley@gaiconsultants.com

APPENDIX A

WVDEP AML PROJECT EXPERIENCE

APPENDIX A - GAI ABANDONED MINE LANDS PROJECTS
WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION

Title: **Duck Creek (Jenkins) Landslide**
Location: Harrison County, WV
Tasks: The scope of work involves the design of stabilization measures for the slide and design of seepage and stormwater drainage controls. Construction plans and technical specifications were developed.

Title: **Wolfpen (McBurney) Landslide**
Location: Kanawha County, WV
Tasks: The scope of work involves stabilizing a slope, providing seals for collapsed portals, and providing controlled drainage. Construction plans and technical specifications were developed.

Title: **Latrobe (Gibson) Landslide Emergency Project**
Location: Logan County, WV
Tasks: The scope of work involved emergency evaluation and investigation to develop alternatives to reduce slopes, eliminate instability, and provide for controlled drainage. Once an alternative was selected, construction plans and specifications were developed.

Title: **Charleston (Ratcliffe) Landslide**
Location: Kanawha County, WV
Tasks: The project included subsurface investigation; research of mine mapping; and determination if the slide was due to mining.

Title: **Mulberry Fork (Stover) Landslide**
Location: Fayette County, WV
Tasks: The project included subsurface investigation and design of corrective measures for a landslide.

Title: **Courtright Highwall**
Location: Bridgeport, WV
Tasks: The project included a subsurface investigation to determine extent of landslide and whether mining related, field surveying to establish topographic mapping and control, and subsequent design of landslide repair alternatives. Design ultimately selected included a reinforced slope using stabilizing grid. Landslide contained 400,000 cubic yards of material.

Title: **Belle (Malcolm) Landslide**
Location: Belle, WV
Tasks: Landslide stabilization including excavation of slide mass, sealing of several mine entries, and drainage controls. Project included drilling, sampling, and piezometer installation and monitoring to develop project plans and specifications.

Title: **Williamson (Elias) Landslide - Emergency**
Location: Williamson, WV
Tasks: Subsurface investigation and determination of whether or not a landslide threatening one home was mining related with subsequent development of plans for a retaining wall were conducted.

Title: **Kitchen/Gibson Landslide - Emergency**
Location: Boone County, WV
Tasks: Subsurface investigation and determination of whether or not a landslide threatening four homes was mining related were conducted.

Title: **Duck Creek Landslide**
Location: Gilmer County, WV
Tasks: The project included subsurface investigation, development of construction specifications and drawings, and construction monitoring for remedial work on a landslide resulting from uncompacted strip bench spoils.

Title: **Ven's Run Maintenance Project**
Location: Harrison, County, WV
Tasks: The scope of work involves stabilizing the slopes and provide for controlled drainage. It is GAI's initial approach to the abatement of the landslide is to provide a proposed reclamation plan that will grade the slide in place as much as practical and not conduct a total removal of material.

Title: **Oldfield Branch (Hall) Drainage**
Location: Mingo County, WV
Tasks: The scope of work involved providing mine seals or bat gates for four mine entries, landslide mitigation with a retaining wall, and providing proper drainage control measures. We also prepared and obtained a Stormwater NPDES Permit and COE 404 permit.

Title: **Laurel Point Strip**
Location: Monongalia County, WV
Tasks: The project consisted of 2 sites. The scope of work involved regrading and soil covering refuse pile, constructing access roads, providing streambank stabilization, sealing the mine portal(s), backfilling highwalls, landslide reclamation, providing proper drainage control measures and revegetating the areas. Construction plans and technical specifications were developed. We also prepared and obtained a Stormwater NPDES Permit and WVDOH permits.

Title: **Mingo County PSD Feasibility Study (ID#405)**
Location: Mingo County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing of the previous water system' supplies; researching water quality records; designing and costing remedial measures; and summarizing the findings in a report

Title: **Amigo Portals**
Location: Raleigh County, WV
Tasks: The scope of work involved providing closure of 19 mine portals with bat gates or mine seals, covering exposed refuse, providing stream realignment and streambank protection, and providing proper drainage control measures. We also prepared and obtained a Stormwater NPDES Permit and COE 404 permit.

Title: **Larry Frederick Highwall & Refuse**
Location: Harrison County, WV
Tasks: The scope of work involved providing closure of three mine portals mine seals, regrading and reseeding an exposed refuse, revegetation of a highwall bench, and providing proper drainage control measures. We also prepared and obtained a Stormwater NPDES Permit.

Title: **Eastern Wyoming County PSD Feasibility Study (ID#401)**
Location: Wyoming County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Raleigh County PSD Feasibility Study (ID#397)**
Location: Raleigh County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Wheatley Branch (Luthy) Portals**
Location: Logan County, WV
Tasks: The scope of work involved several locations of abandoned trash piles, access road construction, 29 mine seals, and providing proper drainage control measures. We also prepared and obtained a Stormwater NPDES Permit, WVDOH MM-109 permits and a non-reporting nationwide COE 404 permit.

Title: **Webster County Commission Diana Area Feasibility Study (ID#383)**
Location: Webster County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Cherokee Complex**
Location: McDowell County, WV
Tasks: The scope of work involved providing regrading and soil covering of the refuse pile, providing natural stream restoration and streambank protection, structure demolition, and providing proper drainage control measures. We also prepared and obtained a Stormwater NPDES Permit and COE 404 permit.

Title: **Reynoldsville Refuse**
Location: Harrison County, WV
Tasks: The project consisted of 11 sites. The scope of work involved providing regrading and soil covering refuse piles, construct access roads, provide streambank stabilization, sealing mine portal(s), bat gates, demolition of mining structures, filling of vertical shafts, regrade sink hole areas, provide proper drainage control measures, and revegetate the areas. Construction plans and technical specifications were developed. We also prepared and obtained a Stormwater NPDES Permit and WVDOH permits.

Title: **Earling Refuse Pile**
Location: Logan County, WV
Tasks: The scope of work included regarding the refuse pile, provide streambank stabilization, stream restoration, seal the mine portal(s), bat gates, and provide proper drainage control measures. Construction plans and technical specifications were developed. We also prepared and obtained a Stormwater NPDES Permit.

Title: **Erbacon CR9 Webster County WL Feasibility Study (ID#376)**
Location: Webster County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Kanawha Rambling Hills Water Study**
Location: Kanawha County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Davis Creek Water Study**
Location: Kanawha County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Coalburg Water Study**
Location: Kanawha County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Wallace 353 Water Study**
Location: Harrison and Wetzel Counties, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Wallace 354 Water Study**
Location: Harrison County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Greystone Mine Drainage**
Location: County, WV
Tasks: The scope of work involves providing seals for the collapsed portals, backfilling the highwalls, reclamation of the refuse pile, and providing proper controlled drainage including natural stream design. Construction plans and technical specifications were developed.

Title: **Route 60 Drainage**
Location: Fayette County, WV
Tasks: The scope of work involves providing seals for the collapsed portals, design of controlled drainage, and design of a pneumatic concrete wall for a rock highwall. Construction plans and technical specifications were developed.

Title: **Lynch Run Highwall #6**
Location: Gilmer County, WV
Tasks: The scope of work involves providing seals for the collapsed portals, backfilling the highwalls, reclamation of the refuse pile, and providing proper controlled drainage including natural stream design. Construction plans and technical specifications were developed.

Title: **Mallory Refuse Pile**
Location: Logan County, WV
Tasks: The scope of work involves regarding the refuse pile, sealing the mine portal(s), and design of drainage control measures. Construction plans and technical specifications were developed.

Title: **Heizer Creek (Lett-Zitselberger) Drainage**
Location: Putnam County, WV
Tasks: The scope of work involves stabilizing a slope, providing seals for collapsed portals, and providing controlled drainage. Construction plans and technical specifications were developed.

Title: **Hominy Creek Area Waterline Extension Feasibility Study**
Location: Nicholas County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Logan (Marcum) Drainage Emergency Project**
Location: Logan County, WV
Tasks: The scope of work involves emergency evaluation and investigation to develop a method to collect and discharge the seepage from the coal seam and conveyance to a downstream drainage system. Construction plans and specifications were developed.

Title: **Bud/Alpoca Waterline Extension Feasibility Study**
Location: Wyoming County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Nuriva/Maben Waterline Extension Feasibility Study**
Location: Wyoming County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Herndon Heights Waterline Extension Feasibility Study**
Location: Wyoming County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Handley/Upper Creek Drainage Project**
Location: Kanawha County, WV
Tasks: The reclamation plan included dewatering the underground impoundment(s) and creating diversion ditches to redirect the drainage around structures to the nearby stream. Regrading the areas behind the retaining wall, revegetating, and providing proper drainage for all disturbed areas is also included in the plan.

Title: **War Waterline Extension Feasibility Study**
Location: McDowell County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Clark's Gap Waterline Extension Feasibility Study**
Location: Mercer and Wyoming Counties, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **War (Dash) Impoundment**
Location: McDowell County, WV
Tasks: The scope of work included providing aerial mapping and ground survey for verification of two sites consisting of a small impoundment, several mine portals, and coal refuse disposal. In addition, stability analyses were performed on various scenarios for the elimination of the impoundment including subsurface investigation.

Title: **Whites Run Highwall and Portal**
Location: Randolph County, WV
Tasks: The scope of work consist of preparing construction documents for the reclamation of 6,000 linear feet of highwall, three deep mine portals, a coal refuse spoil area, and treatment of acid mine drainage (AMD). The treatment of the AMD will utilize passive treatment techniques. The project also includes re-establishment of a stream by natural stream techniques.

Title: **Helen Portals**
Location: Raleigh County, WV
Tasks: The scope of work included the preparation of construction documents for four sites, consisting of abandoned mine portals, unstable refuse piles, small impoundment, and demolition of a mining related structure. The project also included re-establishing a stream by natural stream techniques.

Title: **Ned's Branch Impoundment (Phase II)**
Location: Mingo County, WV
Tasks: The scope of work included this preparation of construction documents for reclamation of the failed impoundment. The scope of work included regrading of refuse, eliminating impoundment capability, sealing of mine portals, stream restoration, highway relocation and construction management services for the above activities.

Title: **Bearwallow Branch Refuse Pile**
Location: McDowell County, WV
Tasks: The scope of work included the preparation of construction documents for reclamation of seven sites. The various sites consist of unstable refuse piles, abandoned mine portals, small impoundments, and miscellaneous structures.

Title: **Community of Preston - State Route 72 Waterline**
Location: Preston County, WV
Tasks: The scope of work included the preparation of construction documents for a water transmission line. The total length of waterline is approximately 1.1 miles.

Title: **Anchor Road Waterpumping, Storage and Distribution Feasibility Study**
Location: Logan County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Standard, Paint Creek, Collinsdale Waterline Extension Feasibility Study**
Location: Kanawha County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **McAlpin Eroding Dump - Phase II**
Location: Raleigh County, WV
Tasks: The scope of work included the preparation of construction documents for eleven sites. The sites consisted of ten coal refuse piles (one of which is burning), numerous mine openings (both collapsed and open), old mine buildings, possible AMD, and various mine related debris.

Title: **McAlpin Eroding Dump - Phase I**
Location: Raleigh County, WV
Tasks: The scope of work included the preparation of construction documents for six sites. The sites consisted of six coal refuse piles, numerous mine openings (both collapsed and open), old mine buildings, possible AMD, and various mine related debris.

Title: **Kingwood 52/6 Water Supply Extension**
Location: Preston County, WV
Tasks: The scope of work included the preparation of construction documents for a water transmission line. Included in the distribution system are a 96,000 gallon water storage and a booster pump station. The total length of waterline is approximately 13 miles.

Title: **Micajah Ridge - Herndon Heights/Itman Waterline Extension Feasibility Study**
Location: Wyoming County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Water Feasibility Study, Glen Rogers Study Area**
Location: Wyoming County, WV
Tasks: Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Title: **Rt. 20 / Gould Community Waterline Extension Feasibility Study**
Location: Upshur County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Water Feasibility Study, Elkins/Buckhannon Study Area**
Location: Upshur County, WV
Tasks: Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Title: **Laurel Creek Subdivision Subsidence**
Location: Raleigh County, WV
Tasks: Preparation of construction documents for the Laurel Creek Subdivision Subsidence project in Beckley, WV. Project involved subsurface investigation (including borehole camera work); sampling of mine water; injection plan layout for grouting under over 40 residences; surface water drainage structure, preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings.

Title: **Superior (PocaLand) Complex**
Location: McDowell County, WV
Tasks: The assessment included a site reconnaissance, asbestos observations and sample analysis, lead-based paint observations and analysis, and limited surficial soil sample analysis. The assessment was concluded in a report to aid in evaluating the existing subsurface soil quality in the area to better understand the costs involved during reclamation efforts.

Title: **Washington Heights to Jeffrey Waterline Extension**
Location: Boone County, WV
Tasks: The project involved a technical review plans and specifications presented by the WVAWC as part of the Boone County Public Service District: Regional Water Supply System. The plans included a total of seven contracts. The scope of work was to identify areas of the contracts that were within project limits set by a Phase II Water Feasibility Study conducted for the WVDEP and to determine the amount of the contract costs that were the responsibility of the WVDEP. Included were field reconnaissance, review of plans, hydraulic calculations, and cost estimating.

Title: **Water Feasibility Study, Gaymont, Edmond, and Winona Study Area**
Location: Fayette County, WV
Tasks: Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Title: **Water Feasibility Study, Hominy Creek Study Area**
Location: Nicholas County, WV
Tasks: Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Title: **Elk Creek / Verner Waterline Extension Feasibility Study**
Location: Logan County, WV
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Orlando Mining Facility**
Location: Gilmer County, WV
Tasks: The scope of work included preparation of a report identifying the results from an investigation/evaluation of the facilities and equipment at the site. The investigation included determining the value, usefulness and/or condition of the facilities and equipment.

Title: **Scotch Hill / Miller Hill Water Supply Extension**
Location: Preston County, WV
Tasks: The scope of work included the preparation of construction documents for a water transmission line beginning at the existing hydropneumatic booster station. Included in the distribution system is 96,000 gallon water storage. The total length of waterline is approximately 7.5 miles.

Title: **Camp Run AMD**
Location: Barbour County, WV
Tasks: The scope of work included the preparation of construction documents for two sites. The sites consisted of ten to fifteen mine portals and mine drainage seep locations, one pond (to be drained), concrete tramway abutments (and debris), coal refuse, and various areas of saturated soil from mine drainage (one of which is sliding).

Title: **Mahan Tipple and Refuse Maintenance**
Location: Fayette County, WV
Tasks: The scope of work included the preparation of construction documents for the repair of a sliding reclaimed coal refuse pile. The project consisted of installing a rock toe buttress and drainage channels

Title: **Johnsons Knob**
Location: Fayette County, WV
Tasks: The scope of work included the preparation of construction documents for four sites. The sites consisted of five coal refuse piles totaling approximately twenty acres, numerous mine openings (consisting of auger hole and portals, both collapsed and open), six old mine buildings, possible AMD, and various mine related debris (including two old conveyors and a collapsed tipple).

Title: **Carolina Refuse**
Location: Marion County, WV
Tasks: The project consisted of two sites. The sites consisted of a refuse pile totaling approximately three acres, various non-mine related debris, and two concrete mine shafts with some various debris.

Title: **Omega Mine Complex Project**
Location: Monongalia County, WV
Tasks: The project involved writing a final report to the Electric Power Research Institute to include a comparison of the pre- and post-injection water quality data, the results of a post-construction benthic survey, and the results of an analysis of data from injection operations.

Title: **Omega Mine Complex Completion**
Location: Monongalia County, WV
Tasks: The scope of work included the preparation of construction documents for a booster station upgrade as part of the Omega Mine Complex project. Hydraulic analyses were performed, new pumps were selected, and a demonstration was made that the new pumps had higher efficiencies than the old pumps. Construction documents for the booster station upgrade and pressure reducing assembly were prepared.

Title: **Hutchinson Subsidence**
Location: Fairmont, WV
Tasks: Preparation of construction documents for the Hutchinson Subsidence project in Fairmont, WV. Project involved subsurface investigation (including borehole camera work); sampling of mine water; injection plan layout for grouting under three residences; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings.

Title: **Fairmont (Grandstaff) Subsidence**
Location: Fairmont, WV
Tasks: Evaluation of potential subsidence effects for the Grandstaff Subsidence project in Fairmont, WV. Project involved subsurface investigation (including borehole camera work); sampling of mine water; and preparation of a report describing the findings of the above investigations.

Title: **City of Summersville (Rt. 39)**
Location: Nicholas County, WV
Tasks: The project included the review of another consultants water feasibility study report and determination if the findings of the report were accurate.

Title: **Reynoldsville, Wallace, and Clarksburg Water Supply Extension Project**
Location: Harrison County, WV
Tasks: The project included a feasibility/rate analysis, design of 9,400 feet of 8-inch water line, 33,000 feet of 6-inch water line, 12,200 feet of two-inch water line, a 96,000 gallon (nominal) water storage tank, and other appurtenances, selection, surveying, and geotechnical investigation of a water storage tank site, and preparation of construction documents, regulatory permit applications, and an engineer’s report.

Title: **Mill Creek Regional Water Supply Extension Project**
Location: Logan County, WV
Tasks: Preparation of construction documents for the construction of water transmission lines, a water distribution system, two water storage tanks, a booster station, two hydropneumatic tanks, and a water treatment plant. The total length of water line to be constructed was approximately 34 miles.

Title: **Majesty Mine Complex**
Location: Barbour County, WV
Tasks: Preparation of construction documents for the reclamation of the Majesty Mine Complex.
The Majesty Mine Complex was an abandoned mine site which included old mine structures, open mine portals, unreclaimed refuse piles and an extensive highwall, existing wetlands and ponds, and numerous seeps producing acid mine drainage (AMD).

Title: **Phase II Water Feasibility Study, Washington Heights to Jeffrey Study Area**
Location: Boone County, WV
Tasks: Phase II water feasibility study for private water supplies in the Washington Heights to Jeffrey Study Area in Boone County, WV. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report. Work was completed on a “fast track” schedule.

Title: **Evaluation of Construction Documents, Gauley River Water Line Extension**
Location: Fayette and Nicholas Counties, WV
Tasks: Evaluation of construction documents for the Gauley River Water Line Extension, to be funded by AML. Evaluation included a review of technical specifications and drawings; evaluation of hydraulics; completion of letter summarizing the evaluation; and meetings to discuss the evaluation.

Title: **Evaluation of Construction Documents, Heizer/Manila Creek Water Line Extension**
Location: Putnam County, WV
Tasks: Evaluation of construction documents for the Heizer/Manila Creek Water Line Extension, to be funded by AML. Evaluation included a review of technical specifications and drawings; evaluation of hydraulics; completion of letter summarizing the evaluation; and meetings to discuss the evaluation.

Title: **Owings Mine Complex**
Location: Harrison County, WV
Tasks:
(1) Evaluation of water quality and potential passive AMD treatment system design at the Owings Mine Complex Site. Project included identification of monitoring points (streams and AMD discharges); sampling and analysis of monitoring points for a three-month period; preparation of a report summarizing the findings; and conceptual design of passive AMD treatment system including costs.

(2) Preparation of construction documents including subsurface investigation; surveying; refuse processing evaluation; grading and drainage design for four refuse piles and various other refuse areas; design of seals for eighteen mine portals; and preparation of technical specifications, drawings, and engineer's cost estimate.

Title: **Omega Mine Complex**
Location: Monongalia County, WV
Tasks: Preparation of construction documents for the Omega Mine Complex project in Monongalia County, WV. The project involved the injection of coal combustion byproduct grouts into mine workings to help alleviate the generation of AMD. Work included subsurface investigation; surveying; grout mix evaluation; acid-base accounting analysis of overburden and coal; and preparation of drawings, technical specifications, and engineer's cost estimate.

Title: **Mill Creek - Isom Community**
Location: Logan County, WV
Tasks: Design of water system to service approximately 800 residents of the Mill Creek-Isom Community in Logan County, WV. Work included sizing of water treatment plant, four water tanks, four booster stations, one pressure reducing valve, and approximately 23 miles of water line. Construction cost was estimated at approximately $5,500,000.

Title: **Phase II Water Feasibility Study, Weaver-Junior Study Area**
Location: Randolph and Upshur Counties, WV
Tasks: Phase II water feasibility study for private water supplies in the Weaver-Junior Study Area in Randolph and Upshur Counties, WV. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Title: **Phase II Water Feasibility Study, Reynoldsville, Wallace, and Clarksburg Study Area**
Location: Harrison County, WV
Tasks: Phase II water feasibility study for private water supplies in the Reynoldsville, Wallace, and Clarksburg Study Area in Harrison County, WV. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Title: **Mainella Subsidence**
Location: Marion County, WV
Tasks: Preparation of construction documents for the Mainella Subsidence project in Fairmont, WV. Project involved subsurface investigation (including borehole camera work); sampling of mine water; injection plan layout for grouting under three residences; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Approximately 15 injection holes were proposed at an estimated construction cost of approximately $138,000.

Title: **Glen Morgan Subsidence**
Location: Raleigh County, WV
Tasks: Preparation of construction documents for the Glen Morgan Subsidence project near Beckley, WV. Project included subsurface investigation (including borehole camera work); base mapping development; sampling of mine water; injection plan layout for grouting under one residence; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Estimated construction cost was approximately $164,000.

Title: **Harris AMD**
Location: Harrison County, WV
Tasks: Preparation of construction documents for the Harris AMD site in Harrison County, WV. Project included subsurface investigation; surveying; sampling of mine discharges; design of channels, wet seals, and drain pipes; preparation of technical specifications, drawings and engineer's cost estimate; and participation in pre-bid and pre- construction meetings. Bid construction cost was approximately $65,000.

Title: **Lefthand Fork (See) Burning Refuse**
Location: Logan County, WV
Tasks: Preparation of construction documents for Lefthand Fork (See) Burning Refuse project.
Project included subsurface investigation including temperature probe readings; surveying; refuse processing evaluation; grading and drainage design for regrading of refuse pile; delineation of burning refuse areas; design of excess material disposal site; completion of IBR for relocating existing bonded haul road; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Bid construction cost was approximately $940,000.

Title: **Summerlee Refuse - Post Construction Water Quality**
Location: Fayette County, WV
Tasks: Water sample collection, analysis, and evaluation at the reclaimed Summerlee Refuse site. Findings were summarized in a report.

Title: **Cow Creek - Sarah Ann Water Supply Extension Project**
Location: Logan County, WV
Tasks: Preparation of construction documents for the Cow Creek - Sarah Ann Water Supply Extension project in Logan County, WV. Project included subsurface investigation; design of three water tanks, three booster stations, one master meter assembly, and approximately 19 miles of waterline; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Bid construction cost was approximately $4,800,000.

Title: **Godby Branch Water Supply Extension**
Location: Logan County, WV
Tasks: Preparation of construction documents for the Godby Branch Water Supply Extension project. Project included subsurface investigation; surveying; design of water tank, booster station, and approximately 2.5 miles of water line; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Bid construction cost was approximately $680,000.

Title: **Phase II Water Feasibility Study, New Haven Study Area**
Location: Fayette County, WV
Tasks: Phase II water feasibility study for private water supplies in the New Haven Study Area in Fayette County, WV. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report. Conceptual design of water system included sizing a water treatment plant, one booster station, five water tanks, and approximately 87 miles of water line. Estimated construction cost was approximately $13,800,000.

Title: **Phase II Water Feasibility Study, Gauley River Study Area**
Location: Fayette and Nicholas Counties, WV
Tasks: Phase II water feasibility study for private water supplies in the Gauley River Study Area. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Title: **Phase II Water Feasibility Study, Heizer and Manila Creek Community**
Location: Putnam County, WV
Tasks: Phase II water feasibility study for private water supplies in the Heizer and Manila Creek Community in Putnam County, WV. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Phase I Water Feasibility Study, Reynoldsville, Wallace, & Clarksburg Study Area**
Location: Harrison County, WV
Tasks: Phase I water feasibility study of the Reynoldsville, Wallace, & Clarksburg Study Area in Harrison County, WV to evaluate the potential for pre-1977 mining activity to have degraded the water supplies of residents. Work included interviews, record searches, field reconnaissance, and preparation of remedial action cost estimates. A report summarizing the findings was submitted.

Title: **Phase I Water Feasibility Study, Weaver-Junior Study Area**
Location: Randolph and Upshur Counties, WV
Tasks: Phase I water feasibility study of the Weaver-Junior Study Area in Randolph and Upshur Counties, WV to evaluate the potential for pre-1977 mining activity to have degraded the water supplies of residents. Work included interviews, record searches, field reconnaissance, and preparation of remedial action cost estimates. A report summarizing the findings was submitted.

Title: **Phase I Water Feasibility Study, Matheny Hill Study Area**
Location: Harrison County, WV
Tasks: Phase I water feasibility study of the Matheny Hill Study Area in Harrison County, WV to evaluate the potential for pre-1977 mining activity to have degraded the water supplies of residents. Work included interviews, record searches, field reconnaissance, and preparation of remedial action cost estimates. A report summarizing the findings was submitted.

Title: **Duncan Hill Subsidence No. 2**
Location: Harrison County, WV
Tasks: Completed subsidence evaluation investigation at the Duncan Hill Subsidence No. 2 project site in Clarksburg, WV. Work included subsurface investigation; mapping development; surveying; records review; water sampling; and preparation of a report summarizing the findings. The report did not recommend stabilization for the structures in the project area, due to a lack of evidence that subsidence was causing problems.

Title: **Urso Subsidence**
Location: Fairmont, WV
Tasks: Field reconnaissance, resident interviewers, videotape surveys of existing conditions, subsurface investigation, surveying, and subsequent evaluation to determine if mine subsidence was affecting structures within a several block area of Fairmont. Ultimately, stabilization program was limited to 5.4 acre area with approximately 28 residences and businesses. Construction documents, including drawings, technical specifications, and engineer's cost estimate were prepared. Proposed construction included approximately 140 injection holes and 18,000 cubic yards of injection material. Construction cost was estimated at approximately $1,200,000.

Title: **Phase I Water Feasibility Studies**
Location: Brooke County, along Gauley River in Fayette County & Nicholas Counties, and New Haven area (around Hico) in Fayette County, WV.
Tasks: Preliminary investigation of three separate communities to evaluate the possibility that pre-1977 mining activity degraded water supplies. The investigation included a review of mining records, existing water quality data, and conductance of resident interviews to assess possible impacts. Separate reports were prepared for each community, documenting findings and providing a cost estimate for extending public water supply systems.

Title: **Phase II Water Feasibility Study, Mill Creek Study Area**
Location: Boone, Lincoln, and Logan Counties, WV
Tasks: Phase II water feasibility study for private water supplies in the Boone County Community, Lincoln County Community, and Logan County Community all encompassed in the Mill Creek Study Area. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in separate reports for each community. Estimated construction cost for extending a public water supply to residents of the Mill Creek Study Area was approximately $15,400,000 and included one water treatment plant, one booster station, seven water storage tanks, and approximately 40 miles of water line.

Title: **Phase II Water Feasibility Study, Godby Branch Community**
Location: Logan County, WV
Tasks: Phase II water feasibility study for private water supplies in the Godby Branch Community in Logan County, WV. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Title: **Madison Street/Fairview Route 218 Portals**
Location: Marion County, WV
Tasks: Preparation of construction documents for the Madison Street/Fairview Route 218 Portals project. Work included subsurface investigation; surveying; design of wet mine seals and associated drains at multiple sites; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings.

Title: **Summerlee Refuse Project**
Location: Fayette County, WV
Tasks: Preparation of construction documents for the Summerlee Refuse pile project. Project included subsurface investigation; surveying; water quality sampling; grading and drainage design for regrading and revegetation of 60 acre refuse pile, two impoundments, and two ponds; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings.

Title: **Putnam County Phase I Water Studies**
Location: Two communities in Putnam County, WV
Tasks: Preliminary investigation of the Manila Creek and Heizer Creek areas of Putnam County to determine the possibility of pre-1977 mining activity degrading water supplies. Study included review of historical mining records, geological data, and resident interviews to assess possible impacts. Report prepared documenting findings and a cost estimate for extending public water supply system.

Title: **Boone County Phase I Water Studies**
Location: Various communities in Boone County, WV
Tasks: Preliminary investigation of the Greenview/Big Branch, Ramage/Six Mile Creek, Secoal/Jeffrey/Obes Branch, Hewett Creek/Missouri Fork, and Meadowfork communities of Boone County to determine the possibility of pre-1977 mining activity degrading water supplies. Study included review of historical mining records, geological data, and resident interviews to assess possible impacts. Reports prepared documenting findings and cost estimates for extending public water supply systems.

Title: **Duncan Hill Subsidence**
Location: Clarksburg, WV
Tasks: Field reconnaissance, resident interviews, videotape surveys of existing conditions, subsurface investigation, borehole video camera surveys, and surveying to determine whether subsidence was affecting numerous homes, water tank, and YMCA over a 16 acre area. Development of report documenting that damages to water tank and YMCA were not subsidence related. Preparation of stabilization plan including plans, specifications, etc. for residential area.

Title: **Phase II Logan Water Feasibility Study**
Location: Logan County, WV
Tasks: Investigation to determine the percentage of residents in the Cow Creek, Crooked Creek and Upper Rum Creek communities whose ground water supplies had been degraded by pre-1977 mining activity. Field reconnaissance, mine map and mine permit records search, interviews, water sampling and analysis, and classification via piper diagrams were conducted.

Title: **Cora Mine Drainage No. II**
Location: Logan County, WV
Tasks: Mine drainage abatement project included drilling and water analysis with subsequent design of several mine seals with piping and channels to convey flow to the receiving stream. Project included boring and jacking pipeline under railroad.

Title: **Covey Creek Mine**
Location: Logan County, WV
Tasks: Field reconnaissance, historical records review, and subsurface investigation to determine extent of mine fire and to develop options for remediation.

Title: **Logan Phase I Water Study**
Location: Logan County, WV
Tasks: Preliminary investigation of the Clothier, Cow Creek, Crooked Creek, Godby Branch, Godby Heights, Upper Rum Creek, and Whitman Creek/Holden communities to determine the possibility of pre-1977 mining activity degrading the water supplies of the communities. Field reconnaissance, interviews, and mining and water quality record searches were conducted, and a remedial cost estimate was provided with reports summarizing the findings for each community.

Title: **Vivian Refuse Pile**
Location: Vivian, WV
Tasks: Subsurface investigation, surveying, and design for reclamation of a large coal refuse pile and two mine entries. Plans, specifications, cost estimate, coal refuse reprocessing evaluation, and supporting documents for regrading over 150,000 cubic yards of refuse, surface water control, mine seals, and riprap toe protection were completed.

Title: **Kimball Refuse Piles**
Location: Kimball, WV
Tasks: Subsurface investigation, surveying and design for reclamation of three coal refuse piles and six mine entries. Design included replacement of a water well and related supply piping for the town of Kimball. Completed preparation of plans, specifications, cost estimate, coal refuse reprocessing report, WV Department of Health permit for new well, and other supporting documents for reclaiming this large site with over ½ million cubic yards of regrading.

Title: **Hampden (Smith) Bridge**
Location: Mingo County, WV
Tasks: Design of metal arch culvert to replace a bridge to allow access to a landslide repair project. Development of plans and specifications were on a fast-track schedule.

Title: **Bear Run Refuse**
Location: Gilmer County, WV
Tasks: Field reconnaissance to establish project limits, develop reclamation options, and collect water quality information to design a wetlands reclamation project. Subsurface investigation, surveying, and development of aerial mapping for 160 acres were conducted. Plans, specifications, cost estimate, reprocessing evaluation and report, and permit application assistance to develop reclamation plan for 13 former coal refuse disposal ponds/impoundments and three refuse piles were completed. Plan included developing and enhancing wetlands.

Title: **Beaver Creek Waterline Extension**
Location: Barbour and Randolph Counties, WV
Tasks: The project included design of a 1.5 mile, 6-inch diameter water line extension including fire hydrants, stream crossings, and service to 13 residents. Preparation of plans, specifications, cost estimate, and supporting documents were completed.

Title: **Garrison Complex**
Location: Garrison, Boone County, WV
Tasks: Subsurface investigation, surveying, and design for the removal of a railroad embankment posing a water impounding hazard were conducted. Project also included several mine entries and surface water runoff control channels. Plans, specifications, cost estimate, and supporting documents were prepared.

Title: **Cassity Fork Water Supply Extension**
Location: Randolph County, WV
Tasks: The project consisted of a water study to document existing water quality and impacts due to mining, subsurface investigations, surveying, and design of an eight-mile waterline extension including booster station, reservoir, pressure reducing valves, and provision for fire flow. Preparation of plans, specifications, cost estimate and supporting documents, and a review of contractor submittals during construction were conducted.

Title: **Beckley (Queen Street) Subsidence**
Location: Beckley, WV
Tasks: Subsurface investigation to determine if mine subsidence was responsible for damages experienced by a home was conducted. Preparation of a report documenting that subsidence was not responsible for the observed damage was completed.

Title: **Jonben (Haga) Subsidence**
Location: Jonben, WV
Tasks: Subsidence control on an emergency basis including sinkhole backfilling and drainage control. Project included drilling to determine the extent of mining and subsidence, field surveying to develop topographic mapping, and development of a backfilling and drainage plan.

Title: **Holden (Padgett) Subsidence**
Location: Whitman Junction, WV
Tasks: The project included subsurface investigation to determine extent of mine workings, development of stabilization plan including drainage channels/pipes, and mine seals. Construction documents were prepared, and participation in pre-bid and pre-construction meetings was completed.

Title: **Minden Mine Fire**
Location: Minden, WV
Tasks: The project included subsurface investigation to determine source and extent of underground fire.

Title: **Doug Gray Subsidence**
Location: Fairmont, WV
Tasks: Subsidence control by injecting grout to fill mine voids. Project included exploratory drilling and sampling including both vertical and angle borings with the subsequent development of a grouting program to support homes and businesses in Fairmont, WV.

Title: **St. John's Road Subsidence**
Location: Brooke County, WV
Tasks: Subsurface investigation and development of specifications and construction drawings for remedial work on mine subsidence affecting 30 acres and 50 homes were conducted.

Title: **High Coal Tipple**
Location: Boone County, WV
Tasks: The project included development of specifications and construction drawings for remedial work on 16 mine portals and an abandoned tipple and its several associated structures.

Title: **Route 19/28 Subsidence**
Location: Harrison County, WV
Tasks: The project included subsurface investigation and development of construction specifications and drawings, and topographic mapping for remedial work on mine subsidence affecting a road.

Title: **Omar Refuse Piles**
Location: Logan County, WV
Tasks: The project included subsurface investigation and development of specifications and construction drawings for remedial work on regrading five refuse piles with over 330,000 cubic yards of earthwork, and sealing six mine portals and a large vertical shaft.

Title: **Mt. Hope (Sawyer) Subsidence**
Location: Fayette County, WV
Tasks: The project included subsurface investigation and development of construction specifications and drawings, and topographic mapping for remedial work on mine subsidence affecting one home.

Title: **Morgantown Airport Drainage**
Location: Morgantown, WV
Tasks: The project included subsurface investigation and development of construction specifications and drawings, and some topographic mapping for remedial work on mine subsidence effecting a day care center and an airport access road, and for closure of four mine portals below the end of a runway.

Title: **Logan Drainage Project**
Location: Logan, WV
Tasks: The project included subsurface investigation and development of construction specifications and drawings, and some topographic mapping for remedial work on four mine portals, a mine seep, and 400 feet of abandoned conveyor with its headhouse and loadout platform.

Title: **Huffman Street Subsidence**
Location: Fairmont, WV
Tasks: The project included subsurface investigation and development of construction specifications and drawings for remedial work on mine subsidence affecting 20 homes.

Title: **Switzer/Adams/Robinson Drainage**
Location: Logan County, WV
Tasks: The project included subsurface investigation and development of construction specifications, drawings, and topographic mapping for remedial work on three mine portals, including the design of an energy dissipater with associated piping under railroad and state highway.

Title: **Follansbee (Hultsburg) Drainage**
Location: Brooke County, WV
Tasks: The project included subsurface investigation and development of construction specifications and drawings for remedial work on acid mine drainage problems.

Title: **Fairmont East Subsidence**
Location: Fairmont, WV
Tasks: The project included subsurface investigation and development of construction specifications and drawings for remedial work on mine subsidence affecting 125 homes on 20 acres.

Title: **Fairmont IV**
Location: Fairmont, WV
Tasks: The project included subsurface investigation to determine if subsidence of three homes was related to mining and subsequent development of construction specifications and drawings for remedial work on the subsidence.

Title: **Hawkins AMD**
Location: Harrison County, WV
Tasks: The project included subsurface investigation and development of construction specifications, drawings and topographic mapping for remedial work on acid mine drainage emanating from mine portals following a “blow-out” and causing a large saturated area above five homes.

Title: **Kistler Refuse and Mine Fire Extinguishment Program**
Location: Logan County, WV
Tasks: The project included subsurface investigation and development of construction specifications and drawings for extinguishment through grout injection, and subsequent construction monitoring.

Title: **Rebrook Street Drainage**
Location: Clarksburg, WV
Tasks: The project included subsurface investigation and development of construction specifications and drawings for remedial work on acid mine drainage from two mine portals which was effecting a house and its garage, and subsequent construction monitoring.

Title: **Hurricane Fork/Five-Mile Fork Burning Coal Seams**
Location: Kanawha County, WV
Tasks: The project included subsurface investigation and development of costs which would be associated with extinguishment.

Title: **Kingmont Complex Reclamation**
Location: Marion County, WV
Tasks: The project included development of specifications and construction drawings for sealing four mine portals and demolishing a steel river truss and buildings associated with an abandoned deep-mine complex.

Title: **Fairmont No. 2 Subsidence**
Location: Fairmont, WV
Tasks: The project included report with recommendations after a subsurface investigation to determine whether or not subsidence of three homes was mining related, and subsequent development of specifications and construction drawings.

Title: **Green’s Run Highwall and Marrara Spoil Area Reclamation Projects**
Location: Preston County, WV
Tasks: The project included subsurface investigation with test-pits and development of specifications and construction drawings for reclaiming 30 acres of strip mine with three highwalls, six refuse piles, and two access roads.

APPENDIX B

KEY PERSONNEL RESUMES

Jason Gandee

Senior Project Engineer

Education

BS, Civil Engineering Technology, 2007, West Virginia University Institute of Technology

Skills

Civil Engineering

Civil Site Design

Stormwater Management

Environmental Compliance

Hydrologic and Hydraulic Design

Drainage and Grading Plans

Erosion and Sediment Control

Floodplain Studies

Certifications / Training

Troxler Nuclear Density Operator, 2001

HEC-RAS Course, National Highway Institute

Industry Experience

GAI Consultants, Inc., 2018-Present

Potesta & Associates, Inc., 2007-2018

Professional Summary

Mr. Gandee specializes in civil engineering design for GAI's Energy Business Unit. Project responsibilities include: civil site design, hydrologic and hydraulic design, grading plans, roadway layout, and stormwater management plans. He develops engineering calculations, prepares project drawings, generates contract documents and specifications, and completes engineering reports. He also has experience with construction oversight and construction management, and site inspections.

Mr. Gandee has experience preparing West Virginia Department of Transportation, Division of Highways (WVDOH) MM-109 occupancy permits; and construction stormwater National Pollutant Discharge Elimination System (NPDES) permits and supporting documents. He has prepared Spill Prevention, Control, and Countermeasure (SPCC) Plans, and is knowledgeable of current erosion and sediment control materials and requirements. Additionally, Mr. Gandee has performed floodplain studies using HEC-RAS to estimate the changes of the floodplain due to construction; projects include: site development adjacent to streams, bridge construction, and culvert installation. Mr. Gandee also has experience with sampling and testing materials, including soils and concrete. Testing included nuclear density testing for compaction of soils, concrete/grout testing, and cylinder fabrications.

Select Professional Experience

- Project Engineer for over 25 reclamation projects for the West Virginia Department of Environmental Protection (WVDEP), Office of Abandoned Mine Lands. Responsible for site reconnaissance to determine the scope of the project; monitoring subsurface exploration drilling; preliminary and final design drawings; technical specifications; engineer's cost estimate; and conducting pre-bid and pre-construction meetings with contractors. Submitted and obtained NPDES construction stormwater permits and United States Corps of Engineer regional permits for the projects.
- Project Engineer for two WVDEP, Office of Special Reclamation Bond Forfeiture Projects. Responsible for developing construction plans to eliminate highwalls; regrading refuse piles; providing hydrologic and hydraulic design to manage stormwater on the site; designing ponds for active treatment; technical specifications; engineer's cost estimate; and conducting pre-bid and pre-construction meetings with contractors.

- CCR Rule Compliance Project, Harrison County, West Virginia. Civil Engineering Support. Assisted in the visual inspection of the CCR landfills to identify signs of distress or malfunction. Assisted in the completing the inspection report that discussed changes in geometry of the structure, appearance of an actual or potential structural weakness of the CRR impoundment, and any other changes which may affect the stability or operation of the CCR landfill.
- CCR Compliance Project, Pleasants County, West Virginia. Civil Engineering Support. Assisted in the visual inspection of the CCR landfill and impoundment to identify signs of distress or malfunction. Assisted in the completing the inspection report that discussed changes in geometry of the structure, appearance of an actual or potential structural weakness of the CRR impoundment or the impoundment, and any other changes which may affect the stability or operation of the CCR landfill or the impoundment.
- CCR 7-Day Inspections, Harrison County, West Virginia. Civil Engineering Support. Assisted in the visual inspection of the CCR landfills to identify signs of distress or malfunction. Assisted in the completing the inspection report that discussed changes in geometry of the structure, appearance of an actual or potential structural weakness of the CRR impoundment, and any other changes which may affect the stability or operation of the CCR landfill.
- Calhoun County Park Improvements Project, Mid-Ohio Valley Regional Council, Grantsville, West Virginia. GAI is performing the following services for this project: preliminary design; assistance with funding applications; final design; bidding; services during construction; and construction inspection. Responsible for civil site design which includes utilities, building pad and access road layout.
- Interstate Widening Project, Huntington, West Virginia. Project Engineer. Responsible for preparing maintenance of traffic plans; geometric layout plans; construction drawings; and signing and marking plans for the project.
- Floodplain Management Projects. Project Engineer. Responsible for data gathering for the projects; estimating the hydrology at the site; performing hydraulic modeling of the watershed for existing and proposed conditions using HEC-RAS to determine the flood elevations and impacts; and report summarization.

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Charles Straley, PE, PLS, MS

Senior Engineering Manager

Education

MS, Geotechnical Engineering, 1988, University of Akron

BS, Civil Engineering, 1986, University of Akron

Registrations

Professional Engineer (PE): KY, IN, OH, WV

Professional Licensed Surveyor (PLS): WV [redacted]

Skills

Subsurface Exploration

Foundation & Embankment Design

Slope Stability & Landslide Engineering

Landfill Planning & Design

Water Feasibility Studies

Acid Mine Drainage

Certifications / Training

Leaders to Watch, GAI Consultants, Inc., 2011

Advanced Project Management Training, GAI Consultants, Inc., 2009

Troxler Certified

40-hour Health and Safety Training

8-hour Supervisor Health and Safety Training

Industry Experience

GAI Consultants, Inc., 1988 - Present

University of Akron, Private Consulting and Testing, 1986-1987

Professional Summary

Mr. Straley specializes in civil engineering with an emphasis in geotechnical engineering, including all aspects of subsurface exploration, laboratory testing, foundation and embankment design, slope stability, material and construction specifications, and construction administration, management and monitoring. He has over 30 years of experience specializing in project management and geotechnical engineering services for over 95 West Virginia Department of Environmental Protection (WVDEP) mine reclamation projects throughout West Virginia.

Select Professional Experience

- White Avenue Slip Project, City of Morgantown, Morgantown, West Virginia. Project Advisor. The project included the remediation and design of a roadway damaged by a landslide located in Morgantown, West Virginia. The project required stabilization of the hillside, road repair, drainage upgrades, and remediation below the slip.
- Ned's Branch Impoundment Dam, Office of Surface Mine Reclamation and Enforcement (WVDEP), Mingo County, West Virginia. Design of and preparation of construction documents for a 600,000 cubic yard failed coal slurry impoundment dam as an emergency reclamation project. Activities included site grading, subsurface investigation, hydraulics and hydrology analysis, road re-design, mine seals, preparation of drawings and technical specifications, engineering cost estimate and pre-bid meeting presentation.
- Tomlinson Run State Park, West Virginia Department of Natural Resources (WVDNR), Hancock County, West Virginia. Abandoned Mine Lands Design, construction monitoring, and construction administration for two lake dredging projects. Activities included subsurface investigation, regulatory approvals, construction drawings, technical specifications, construction troubleshooting, cost estimating, daily reports, and client interaction.
- Lodestar Energy Valley Fill Landslide, WVDEP, Office of Abandoned Mine Lands and Reclamation (AMLR), Raleigh County, West Virginia. Design of and preparation of construction documents for a landslide above a residence as an emergency project for the WVDEP, Office of Special Reclamation and Lodestar Energy. Activities included: site grading, subsurface investigation, hydraulics and hydrology analysis, collection of mine drainage and mine seals, preparation of drawings and technical specifications, engineering cost estimate and pre-bid meeting presentation.

- Latrobe (Gibson) Landslide, WVDEP-AMLR Logan County, West Virginia. Design of and preparation of construction documents for a landslide above a residence as an emergency project for the WVDEP, Office of Abandoned Mine Lands. Activities included: site grading, subsurface investigation, hydraulics and hydrology analysis, valley fill design, United States Army Corps of Engineers (USACE) permitting, preparation of drawings and technical specifications, engineering cost estimate and pre-bid meeting presentation.
- Ven's Run Landslide #2, WVDEP-AMLR, Harrison County, West Virginia. Design of and preparation of construction documents for a previously repaired landslide for the WVDEP, Office Abandoned Mine Lands. Activities included site grading, subsurface investigation, hydraulics and hydrology analysis, road re-design, preparation of drawings and technical specifications, engineering cost estimate and pre-bid meeting presentation.
- Majesty Mine Complex Project, WVDEP-AMLR, Barbour County, West Virginia. Design of a reclamation plan for the Majesty Mine Complex. The project included the design of site drainage along WV Route 16/2 (including channels and culverts), reclamation of two landslide areas along WV Route 16/2, and a soldier (pile and lagging) wall to support a landslide in WV Route 16/2.
- Summerlee Refuse Pile Project, WVDEP-AMLR, Fayette County, West Virginia. Designed the regrading and drainage channels for a 75-acre coal refuse pile. Developed specifications for the project that included earthwork, drainage structures and wetland plants. Design included analysis of water quality for determining potential treatment alternatives.
- Lefthand Fork Burning Refuse Project, WVDEP-AMLR, Logan County, West Virginia. Designed the regrading and drainage scheme for a 60-acre coal refuse. The project included the excavation and extinguishment of burning refuse and disposal of excess refuse in a valley fill. Developed specifications for the project. Prepared an application for the WV Public Land Corporation permit and USACE 404 Nationwide Permit. Prepared an Incidental Boundary Revision application to relocate a permitted haul road.
- Kimball Coal Refuse Piles Project, WVDEP-AMLR, Kimball, West Virginia. Performed stability analysis for three existing coal refuse embankments. Designed and evaluated the proposed regrading and geometric changes to the coal refuse embankments. Developed specifications for the project which included a reinforced earth wall and water well replacement. Prepared application for replacement well permit and the USACE 404 Nationwide Permit.
- Owings Mine Complex Project, WVDEP-AMLR, Harrison County, West Virginia. Design of a reclamation plan. Project included surface and subsurface drainage design (including a concrete box culvert crossing of WV County Route 12/4) and preparation of technical specifications (including traffic maintenance and other WVDOH standard specifications), drawings, engineer's cost estimate, and obtaining the USACE permit.
- Closure design for an 11-acre municipal solid waste landfill for the WVDEP - Office of Waste Management. Grading, slope stability analyses, cap design, leachate collection, leachate treatment, and construction document preparation were major aspects of the project.
- Duncan Hill Subsidence Project, WVDEP-AMLR, Harrison County, West Virginia. Monitored subsurface exploration, designed and developed specifications for an abandoned mine subsidence project. The project included stabilizing the abandoned mine workings by injecting cement grout and concrete and providing drainage from a portion of the workings. The project included a bore and jack pipe into the mine workings.
- Cora Mine Drainage II Project, WVDEP-AMLR, Logan County, West Virginia. Designed the mine seals and drainage scheme for a series of abandoned mine entries. Developed the specifications which included the mine seals, drainage pipes and appurtenances and a bore and jack pipe.
- Project Manager for a stream relocation project in Grant County, West Virginia. The project involved crossing an existing stream channel over an acid mine drainage channel to a water treatment facility. The design consisted of a combination of relocated channels, spillways, and box culverts.
- Expert witness in identifying the source of an acid mine drainage through a tunnel under a WVDOH highway. Performed a structural inspection of the tunnel to obtain grade release for the mine permit.

- Middleton Run Reclamation Project, located in Jackson County, Ohio, for the Ohio Department of Natural Resources (ODNR), Division of Mineral Resource Management. Project Manager responsible for geotechnical engineering and development of remediation measures for the Middleton Run Reclamation Project, an abandoned mine site in Ohio. The 80-acre site was the largest major acid mine drainage contributor degrading the Raccoon Creek Watershed, and contained four acidic strip-pit lakes, an abandoned deep mine, and large areas of toxic mine spoil and mine tailings.
- Completed the geology and hydrogeology sections for a new deep mine permit application in Logan County, West Virginia. Completed stability analysis for various slopes in different portions of the permit application.
- Mill Creek Regional Water Supply Extension Project in Logan County, WV. Scope of work included construction of water transmission lines, a water distribution system, two water storage tanks, a booster station, two hydropneumatic tanks, and a water treatment plant. The total length of water line to be constructed is approximately 34 miles. The project included design of: site drainage (including channels and culverts), site grading, redesign of WV Route 12 (including approval from WVDOH, subsurface investigations, preparation five railroad crossing permits, WVDOH occupancy permit, WV Department of Environmental Protection (WVDEP) permit, WV Office of Environmental Health (WVOEH) permit, WV Public Lands Corporation permit, and USACE permit. Numerous meetings with the WVDEP, LCPSD, WV Public Service Commission, and the WVOEH were required. GAI coordinated water line alignment work with numerous utility companies to avoid conflicting the location of the existing utility lines and proposed water transmission line and distribution system The scope of work also included the design of a steel tank pre-sedimentation basin, adsorption clarification/filtration treatment units with a total 3,000 GPM capacity, a pretreatment chemical feed system (including metering pumps, chemical mixers, solution tanks, and in-line mixers), water intake pumps, a decant basin (including excavation, foundations, walls, piping, etc.), sludge drying beds, a post treatment chemical feed system, clearwell and baffle assembly, and the treatment plant building. The water treatment plant was designed to provide 400 GPM of potable water.
- Performed coal reserve calculations on various highway construction projects throughout West Virginia. Each study estimated the volume and value of the coal to be disturbed by excavation, as well as identifying active and abandoned coal mines in the path of construction.
- South Ruffner Phase I Drainage Project, City of Charleston, West Virginia. Project Manager. Evaluated storm water flows and identified problem areas. Contract plans and related documents were prepared to upgrade a portion of the drainage area.
- Professional Engineer and Construction Manager for the mine seal and drainage collection for an abandoned mine project in Pomeroy, Ohio for the ODNR.
- Project Designer for a three-mile wellness trail located parallel to the Little Coal River in Madison County, West Virginia for Boone Memorial Hospital and the WVDOH. The design included a wellness trail, timber footbridge, preparation of construction documents, bidding instructions, contractual agreements, and engineer cost estimate.
- Project Manager for the preparation of a floodplain permit for a pond constructed within the 100-year floodplain of the Ohio River. Permitting consisted of preparing hydrology/hydraulic calculations to determine if the pond altered the routing of a 100-year storm.
- Project Manager for the preparation of construction documents for two lake dredging projects in West Virginia for the WVDNR, Parks and Recreation. Design included providing a dredging scheme, disposal site design, a water handling plan to maintain stream flow, and providing a sediment control plan for both the dredging operations and the disposal site. Provided construction administration service and oversight of construction monitoring service.
- South Ruffner Storm Water Management Project, Charleston, West Virginia. Project Manager. Performed a comprehensive study of the drainage system and conceptual design of improvements to the drainage system. Designed Phase I of the improvements including twin aluminized-steel culverts and a concrete box culvert.

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Donald Splitstone, PE

Engineering Manager

Education

BS, Civil and Environmental Engineering, 1998, University of Pittsburgh

BS, Engineering Physics, Miami University, 1996

Geotechnical Engineering, University of Pittsburgh, Graduate Studies, 1998-2002

Registrations

Professional Engineer (PE): PA [redacted], OH [redacted], WV [redacted]

Skills

Civil Engineering

Industry Experience

GAI Consultants, Inc., 2015-Present

HDR Engineering, 2004-2015

Nicholson Construction, 2002-2004

Gannett Fleming, 1998-2002

USX, 1996-1998

Professional Summary

Mr. Splitstone specializes in design and construction of geotechnical projects for transportation, transit, railroad, government, and private clients. He has 14 years of design and construction management experience as a consulting engineer and three years of design and construction experience as an engineer for a specialty geotechnical contractor.

Mr. Splitstone's field and construction experience includes site reconnaissance and inspection for subsurface investigations (sample identification and logging), general construction inspection, forensic investigations, and specialty geotechnical construction. He has extensive experience in design and construction of specialty geotechnical foundation and retaining wall techniques including micropiles, drilled shafts, soil and rock anchors, soil nails, stone columns, vibro-compaction, jet grouting, driven piles, mechanically stabilized earth (MSE) and reinforced soil slope (RSS) walls, anchored soldier-pile and lagging (SP&L) walls, structural slurry (diaphragm) walls, as well as more traditional cast-in-place (CIP) foundation and wall systems.

Select Professional Experience

- Access Road Landslide Investigation and Remediation, Confidential Client, Doddridge County, West Virginia. Engineering Manager. GAI evaluated the slope stability and landslide concerns identified along a substation access road located in West Virginia. GAI performed the investigation, conceptual design and coordination with our client, development of recommendations and conceptual alternatives for addressing the landslide, final design of an approved alternative, and construction support to address the landslide.
- Corridor H, Grant County, WV, WVDOH/Trumbull Corporation (Design/Build). Performed analysis and design calculations to develop roadway and structure foundation recommendations as lead geotechnical designer for the project team. Efforts included subsurface investigation program development, test boring inspection, driven pile and drilled shaft design, slope stability and settlement analysis, and MSE wall design in addition to typical design work associated with the roadway. Performed construction consultation services, including integrity inspections and analysis of cross-hole sonic (CSL) tests of drilled shaft rock sockets and assessment of proposed waste embankment area stability above an existing roadway cut.

- Access Road Landslide Investigation and Remediation Project, Doddridge County, West Virginia. Engineering Manager. Managed analysis and design calculations to develop slope stabilization recommendations as lead geotechnical designer. Recommendations included Soldier Pile & Lagging (SP&L) walls socketed into drilled shafts, a micropile "insert" or "A-Wall" with micropiles tied together with a cap beam and a several soil nail slope and wall options. Final design included development of final analyses, specifications, plans and details of the selected soil nail wall option and associated site civil and drainage construction.
- Uniontown to Brownsville Segment (SR0043, Section 51A) of the Mon-Fayette Expressway, Fayette County, PA, for the PTC. Performed analysis and design calculations to develop roadway and structure foundation recommendations as lead geotechnical designer. The project encompassed three multi-span bridge structures, two multi-span twin bridge structures, one single-span twin bridge structure, six retaining walls, one reinforced soil slope, and included the design of spread footings, pile and drilled shaft foundations, mine grouting and stabilization, slope stability and settlement analysis, and embankment and cut-slope design in addition to typical design work associated with the roadway.
- Wintersdale Road (SR 4014) Landslide Repairs Project, PennDOT, District 4-0, Wayne County, Pennsylvania. Engineering Manager. Performed analysis and design calculations to develop roadway and structure slope stabilization recommendations as lead geotechnical designer. Recommendations included drilled shaft walls tied together with a cap beam and knee wall with reinforced soil backfill and subgrade details. Completed Final Geotechnical Engineering Report Submissions for Preliminary Design.
- Hancock Highway (SR 0191) Landslide Repairs Project, PennDOT, District 4-0, Wayne County, Pennsylvania. Engineering Manager. The sites have proposed structures or geotechnical stabilizations of varying complexity along challenging topography and various waterways. Performed analysis and design calculations to develop roadway and slope stabilization recommendations as lead geotechnical designer. Recommendations included soil nailed and reinforced soil slopes. Completed Final Geotechnical Engineering Report Submissions for Preliminary Design.
- Railroad Landslide Investigation, Confidential Client, Pennsylvania. Engineering Manager. A small slide occurred along the down slope side of a rail line for a Confidential Power Plant. GAI evaluated the slide and made a recommendation to fix the slide. The proposed work consisted of designing a retaining wall for the landslide area.
- Forensic Investigation of SR0070 Support of Excavation Failure, SR0070, Section 10Q, Rostraver Township, Westmoreland County, PA, PennDOT, District 12-0. Senior Geotechnical Engineer on team requested by PennDOT to perform a forensic analysis of a gabion-faced MSE wall used for temporary support of the approach embankment associated with a bridge replacement project. Responsibilities included site investigation immediately after failure and subsequent lane closure, developing recommendations for deconstruction of the failed wall system, subsequent site investigations during deconstruction of the failed wall, and review and back-analysis of design calculations and submittals.
- Emergency Bridge Replacement of Plymouth Road (SR3007) over Plymouth Creek, Montgomery County, PA, for PennDOT, District 6-0. Geotechnical Engineer on team requested by PennDOT to develop design, plans, and specifications for the emergency replacement of a bridge closed due to damage from sink hole activity. Responsibilities included a review of published geologic information and review of foundation design, specifications, and detailing of micropile foundations for the bridge abutments underlain by karst bedrock conditions.
- Northeast Extension (SR0476) Bridge Replacement and Roadway Reconstruction, Structure NB-391, Lehigh County, PA, PTC/Trumbull Corporation (Design/Build). Developed preliminary design of foundations for the replacement of this three-span, 100-foot-tall bridge over the two-lane eastbound Main Street (SR4018) and valley of Trout Creek, reinforced soil slopes, and roadway embankment for pre-bid pursuit of this project.

Keith Schoon, PE, MS

Project Engineer

Education

MS, Civil Engineering, 2013, University of Pittsburgh

BS, Civil Engineering, 2010, University of Pittsburgh

Registrations

Professional Engineer (PE): PA

Skills

Civil Engineering

Retaining Wall Systems Design

Slope Stability Analysis and Design

Foundation Analysis and Design

Certifications / Training

Nuclear Density Gauge Certification, 2011

Hazmat Certification, 2011

Mining Engineering, University of Pittsburgh

Industry Experience

GAI Consultants, Inc., 2010-Present

Professional Summary

Mr. Schoon specializes in geotechnical engineering including embankment stability analyses and remediation recommendations, seepage analyses, design of deep foundations and retaining structures and geotechnical investigations. He has experience in construction engineering and inspection, plan preparation, quantity take-offs, cost estimating, and proposal and report writing.

Select Professional Experience

- White Avenue Slip Project, City of Morgantown, Morgantown, West Virginia. Senior Geotechnical Engineer. Responsible for the calculations for a pile and lagging wall and co-authored the geotechnical engineering report. The project included the remediation and design of a roadway damaged by a landslide located in Morgantown, West Virginia. The project required stabilization of the hillside, road repair, drainage upgrades, and remediation below the slip.
- Embankment Landslide Project, Confidential Client, Doddridge County, West Virginia. Senior Geotechnical Engineer. Project involved a landslide of a 400-feet long by 75-feet high embankment. Responsible for performing stability analyses and providing interim and permanent repair alternatives.
- Electric Transmission Line Right-of-Way Landslide Projects, Confidential Client, Marshall County, West Virginia. Senior Geotechnical Engineer. Numerous projects are comprised of landslides on remote transmission line rights-of-ways. Responsible for performing stability analyses and authoring geotechnical reports with repair drawings.
- West Newton Coal Logistics Refuse Embankment Stabilization Project, Pennsylvania Department of Environmental Protection (PADEP), Westmoreland County, Pennsylvania. GAI conducted subsurface exploration, including soil drilling and in-situ testing, laboratory testing program, and geotechnical engineering analyses.
- Mooney Road Distressed Crib Wall, City of Pittsburgh On-Call Geotechnical Services Contract, Pittsburgh, Pennsylvania. Senior Geotechnical Engineer. Responsible for monitoring the subsurface investigation and collecting site-specific geotechnical data to characterize and verify the subsurface conditions for the design of a replacement wall and repair of the roadway. Prepared the geotechnical site investigation recommendations and report.

- Amusement Park Landslide Analysis and Design Project, Confidential Client, Allegheny County, Pennsylvania. Senior Geotechnical Engineer. GAI developed conceptual construction alternatives to mitigate landslide movements south of an access road. GAI's scope included conducting a reconnaissance of the site; updating landslide features shown on the topographic map; identify available alternatives that could be considered for mitigation of the landslide condition; and evaluating the probable effectiveness and order of magnitude construction cost of each alternative.
- Schenley Park Landslides, Upper and Lower Panther Hollow Trail, City of Pittsburgh On-Call Geotechnical Services Contract, Pittsburgh, Pennsylvania. Senior Geotechnical Engineer. The project involved two landslides along the Upper and Lower Panther Hollow Trail. GAI's scope of work included a subsurface investigation, with drilling and monitoring two borings at each landslide; performing laboratory testing of samples; and providing the City of Pittsburgh with recommendations for remediation, including design for slope stabilization.
- Housing Development Landslide Project, Confidential Client, Butler County, Pennsylvania. Senior Geotechnical Engineer. Project involved a landslide on a 70-foot-high embankment and structural damage of two existing dwellings. Responsible for reviewing all reports and depositions and providing professional option of cause. Additionally, stability analyses was performed and geotechnical report was developed.
- Gas Pipeline Right-of-Way Landslides, Confidential Clients, Greene County, Pennsylvania. Senior Geotechnical Engineer. Numerous projects are comprised of landslides on remote pipeline rights-of-ways with slope ratios up to 1.5H:1V. Responsible for managing site reconnaissance, subsurface explorations, performing stability analyses and authoring geotechnical reports with repair drawings.
- Mooney Road Distressed Crib Wall, City of Pittsburgh, Pennsylvania. Responsible for monitoring the subsurface investigation and collecting site specific geotechnical data to characterize and verify the subsurface conditions for the design of a replacement wall and repair of the roadway. Prepared the geotechnical site investigation recommendations and report.
- Confidential Dam, Beaver County, Pennsylvania. Project Engineering Associate. The 420-foot high by 3,000-foot long dam impounds the coal combustion waste from a coal-fired Power Station, making it one of the largest facilities of its kind in the U.S. Provided engineering services to assess the physical properties of the impounded coal combustion waste through numerous drilling and waste sampling and testing programs; designed facility upgrades to improve impoundment operations; installed instrumentation in the dam embankment to monitor performance; and assisted our client in planning for long-term coal combustion waste management.
- Homewood Suites Expansion, Canonsburg, PA. Geotechnical investigation for building addition, retaining wall, new parking area, and new dumpster pads. Responsible for monitoring subsurface investigation and collecting site specific geotechnical data to characterize and verify subsurface conditions.
- Mingo Creek Bridge Replacement Project, located in Mingo County, Pennsylvania. The project involved the replacement of a 42-foot span bridge. Responsible for summarizing the results of the site reconnaissance, subsurface investigation, laboratory testing, and reviewing available geologic information. Also, aided in writing the Foundation Design Guidance Report, which provided recommendations for future subsurface investigations for final design of alternative foundation types and roadway improvements for a Design-Built Contract.
- SR 88/51 Bridge Replacements and Intersection Improvements Project, located in Allegheny County, Pennsylvania. The project involved replacement of six bridges and construction of a jug handle. Responsible for processing information obtained during the subsurface investigation and laboratory testing, calculating scour depth, bearing and settlement, providing parameters for temporary shoring, providing foundation recommendations and bottom of footing elevations and co-authored geotechnical engineering reports.

A. Edward Sciulli, PG, PMP

Senior Hydrogeology Manager

Education

BS, Geosciences, 1986,
The Pennsylvania State University

Registrations

Professional Geologist (PG): PA-1994, NY-2018

Project Management Professional (PMP), Project Management Institute, 2009

Skills

Geophysical Investigations

Hydrogeology

Feasibility Studies

Environmental Risk Assessments

Groundwater Investigations and Remediation

Watershed Evaluation and Management

Soil Analysis

Hazardous and Industrial Waste Management

Solid Waste Management

Brownfield Development - Site Recycling

Certifications / Training

OSHA 40-Hour Hazardous Waste Operations and Emergency Response

OSHA Hazardous Waste Site Supervisor

OSHA 10-Hour Confined Space Entry and Rescue

Basic First Aid and CPR

Industry Experience

GAI Consultants, Inc., 2012-Present

L. Robert Kimball & Associates, Inc., 1994-2012

Earth Technology Corporation, 1986-1993

Professional Summary

Mr. Sciulli has more than 30 years of environmental due diligence experience conducting Phase I and Phase II Environmental Site Assessments (ESAs) related to the transportation industry, oil and gas industry, commercial / industrial facilities, municipal facilities, and brownfields. He specializes in managing small and large-scale remedial and site investigations, feasibility studies, and geophysical surveys. He has been instrumental in designing and implementing site investigations to guide former industrial sites through state Voluntary Remediation Programs. His diverse skill set includes experience in soil and groundwater evaluation, remediation, aquifer testing, contaminant fate and transport evaluations, hazardous and solid waste regulation, and environmental health and safety.

Select Professional Experience

- UNT #1 of Teter Creek In-Lieu-Fee (ILF) Project, located in Barbour County, West Virginia for the West Virginia Department of Environmental Protection (WVDEP). Task Manger responsible for management of a Phase I Environmental Assessment (EA) of the proposed ILF Mitigation Site. The Phase I ESA was conducted in accordance with ASTM Standard E 1527-13 and consisted of approximately 84 acres of mitigation area. Activities included a review of environmental databases, historical mapping, and a site reconnaissance. Generated the Phase I ESA report documenting the ESA findings and opinions regarding RECs at the site.
- West Virginia University Evansdale Crossing Site, Limited Phase II Environmental Site Assessment (ESA) Project, located in Morgantown, West Virginia. The Limited Phase II was conducted to evaluate potential site impacts related to a reported glycol release and the existing in-ground hydraulic lift.
- Shamokin Creek Watershed for the Northumberland County Planning Commission in Northumberland, PA. Project Manager for an assessment and prioritization of Acid Mine Drainage (AMD) impacts within the Shamokin Creek Watershed.
- Blacklick Creek Watershed for the Blacklick Creek Watershed Association in Indiana County, Pennsylvania. Project Manager for an assessment and prioritization of AMD impacts within the Blacklick Creek Watershed. Work included the development of a user-friendly relational database / GIS used to manage collected data and physical and chemical data analysis. The system was used to prioritize sites for future restoration.

- Oakwood Road Improvements Project, located in Charleston, Kanawha County, West Virginia, for the West Virginia Department of Transportation, Division of Highways (WVDOH). Task Manger responsible for management of a Phase I ESA within the project limits of MacCorkle Avenue South and Davis Creek Interchange in Charleston. The Phase I ESA was conducted in accordance with ASTM Standard E 1527-13. Activities included a review of environmental databases, historical mapping, and a site reconnaissance. Generated the Phase I ESA report documenting the findings and opinions regarding recognized environmental conditions (RECs).
- South Sandy Creek Watershed for the Venango Conservation District in Venango County, Pennsylvania. Project Manager for an assessment and prioritization of AMD impacts within the South Sandy Creek Watershed. Work included the development of a user-friendly relational database / GIS used to manage collected data and physical and chemical data analysis. The system was used to prioritize sites for future restoration.
- Upper and Little Schuylkill River for Schuylkill County Conservation District in PA. Received 2001 and 2002 Governor's Award for Watershed Stewardship. Project Manager for an assessment and prioritization of AMD impacts within the Schuylkill River Watershed. Developed a combined Relational Database / GIS that was used to manage collected data, provide a means for physical and chemical data analysis as it pertains to water quality, provided spatial analysis of water quality between individual discharges and sub-watersheds, identified gaps in data collection, and served as a depository for data gathered in the future.
- Lead Hydrogeologist responsible for the design of a groundwater extraction system at a power generating station to mitigate metals impacts to the adjoining river. Completed supplemental characterization of the facility geologic and hydrogeologic setting. Designed and conducted 72-hour pumping tests to evaluate aquifer characteristics, determine optimal well spacing, and calculate potential capture zones. Designed the installation of six groundwater extraction wells. Developed a Performance Test Plan and evaluated data to demonstrate capture of impacted groundwater. Currently performing system O&M.
- Fourth Street Arch Bridge Replacement Project for the WVDOH, Weston, Lewis County, West Virginia. Task Manger responsible for management of an Environmental due diligence evaluation associated with two alternatives for the bridge replacement project. Evaluations included a review of environmental databases, historical mapping, and other historical environmental data. Coordinated a site reconnaissance and managed the development of the due diligence report and recommendations.
- JC Cruikshank Memorial Bridge Project, located in Ivydale, Clay County, West Virginia, for the WVDOH. Task Manger responsible for management of an Environmental/Hazardous Waste due diligence evaluation associated with the bridge replacement project. Evaluations included a review of environmental databases, historical mapping, and other historical environmental data. Coordinated a site reconnaissance and managed the development of the due diligence report and recommendations.
- Dingess Street Bridge Replacement Project for the WVDOH, Logan County, West Virginia. Task Manger responsible for management of a Phase I Environmental Assessment (ESA) of the existing bridge location. The Phase I ESA was conducted in accordance with ASTM Standard E 1527-13. Activities included a review of environmental databases, historical mapping, and a site reconnaissance. Generated the Phase I ESA report documenting the ESA findings and opinions regarding RECs at the site.
- West Virginia University Evansdale Campus PRT Zone Station, located in Morgantown, West Virginia. GAI provided concept and site planning that will include restaurant, retail, and student facilities at the Evansdale Campus. Performed a Phase I ESA.
- Mt. Gay Deck Arch Bridge and the North Whites Addition Bridge Replacement Project, Logan County, WV, WVDOH, Task Manger responsible for management of an Environmental/Hazardous Waste due diligence evaluation associated with two alternatives for the bridge replacement project. Evaluations included a review of readily available environmental databases, historical mapping, and other historical environmental data. Coordinated a site reconnaissance and managed the development of the due diligence report and recommendations.

gai consultants

Richard Ruffolo, PG, MS

Geological Manager

Education

MS, Geology, 2005, Kent State University

BS, Environmental Geology, 2001, University of Pittsburgh

Registrations

Professional Geologist (PG):
PA [redacted], KY [redacted], NC [redacted]

Skills

Subsurface Exploration and Investigations

Landslide Investigation and Remediation

Foundation and Slope Stability Analysis and Design

Certifications / Training

Advanced Project Management Training, GAI Consultants, Inc., 2009

ASFE Fundamentals of Professional Practice, 2005

Industry Experience

GAI Consultants, Inc., 2002-Present

Pennsylvania Department of Transportation, 2000-2001 (summer internship)

U.S. Marine Corps, 1993-1997, Sergeant, Honorable Discharge

Professional Summary

Mr. Ruffolo specializes in site characterization, subsurface investigations for foundations, landslides, and mine subsidence; analysis of slope stability; foundation design; and geotechnical report writing. He is a registered Professional Geologist in Pennsylvania (PA), North Carolina (NC), and Kentucky (KY) with over 15 years of geological experience. Mr. Ruffolo has experience in rock strength studies; drilling and micropile installation monitoring; foundation construction monitoring; and monitoring core logging.

Select Professional Experience

- Old Clairton Road Subsidence, Pleasant Hills, Pennsylvania, Office of Surface Mining. Responsibilities involved the investigation of a subsidence event that damaged four commercial buildings. Duties included subsurface exploration, site characterization, installation and data analysis of monitoring tilt plates, transit survey and analysis of building tilt due to mine subsidence.
- Dolph Refuse/Abandon Mine Fire, Olyphant, Pennsylvania, Office of Surface Mining. Responsibilities included abandon mine fire characterization, developing a fire monitoring program, and to develop fire controlling recommendations for abandoned anthracite coal refuse/mine fire. Duties included, site characterization, subsurface investigation, geologic mapping, aerial photograph interpretation, mine map research and interpretation, installation and data analysis of downhole temperature recorders, development of fire monitoring program and database, established limits of possible fire migration, report preparation.
- Landslide Stabilization Project, Willow Island, West Virginia. The 300'-wide and 500'-long landslide affected a power station's ash disposal area haul road. Responsible for monitoring drilling and auger cast pile column installation.
- Wyoming Street Wall Grouting, City of Pittsburgh, Pennsylvania. Responsibilities involved the subsurface investigation of an abandoned coal mine and development of subsidence mitigation design. Duties included subsurface exploration, site characterization, preparation of plans and specifications.
- SR 0048, Section 19, in Allegheny County, Pennsylvania. Conducted a landslide investigation and field instrumentation for landslide remediation.

- Municipal Authority of Westmoreland County, Greensburg, Pennsylvania. Responsibilities involved the subsurface investigation of an abandoned coal mine and development of subsidence mitigation design. Duties included subsurface exploration, site characterization, preparation of plans and specifications.
- Mine Subsidence / Collapse Study, Confidential Client. Responsibilities included researching a potential projects site's past mining and providing recommendations and conclusions for the potential of subsidence. Duties included obtaining historic mining maps, researching the sites past mining methods, performing a site reconnaissance to observe subsidence features.
- Ninevah Mine in Seward, Pennsylvania, for the CTC Foundation in Washington, DC to evaluate the possibility of injecting alkaline coal ash into the 537-acre Valley No. 2 Mine to mitigate acid mine drainage polluting the Conemaugh River and Big Spring Run. Assisted with subsurface investigation and monitored drilling to identify abandoned deep coal mine conditions for acid mine pollution abatement project.
- Abandoned Mine Hydrogeology Site Characterization, Virginia. Responsibilities included performing a subsurface investigation to characterize the condition of multiple abandoned coal mines along with a hydrogeological study. Duties included subsurface investigation, geologic mapping, well installation, and testing.
- Romney Bridge (US 50) Replacement Project over the Potomac River in Hampshire County, West Virginia for the West Virginia Department of Transportation, Division of Highways (WVDOH). Responsible for subsurface investigations and a geotechnical report for the bridge replacement.
- Gateway Connector at East Marion County Park in Fairmont, West Virginia for the WVDOH. Impact assessment project to address impacts to the park resulting from construction of the one-mile expressway from Interstate 79 to the City of Fairmont. Assisted with subsurface investigation.
- SR 0048 in Allegheny County, PA. Responsible for slope stability analysis and design for roadway widening along an existing section of the state route.
- PennDOT, District 11-0, Open-End Contract. Assisted with various projects in Allegheny, Beaver, and Lawrence Counties, Pennsylvania for an open-end contract comprising over 80 work orders. Responsible for preparing soil, geologic, and hydrologic setting reports, and conducting surface mine inspections.
- Interstate 79, Section A12, Reconstruction for the PennDOT, District 11-0. Conducted subsurface investigations and prepared geotechnical reports for 5.8 miles of interstate highway reconstruction, including three interchanges, 22 bridges, two retaining walls, four culverts, and 14 sign structures. Responsible for geotechnical investigations and report for the Kirwin Heights Bridge in Bridgeville.
- Tamarack Lake Dam A and Dam B in Crawford County, Pennsylvania for the Pennsylvania Department of General Services (PADGS), Bureau of Engineering and Architecture. Assistant Geological Manager. GAI redesigned two high-hazard dams associated with Tamarack Lake, a 1,000-acre flood control. GAI completed a significant geotechnical investigation that involved a drilling program, lab testing, ground penetrating radar, in-situ testing, stability analyses, and settlement calculations. A hydrologic and hydraulic study of the two dams utilizing HEC-RAS and HEC-HMS for a five-square-mile drainage area was also completed.
- Westmoreland Air Park for the Westmoreland County Industrial Development Authority in Westmoreland County, PA. Responsible for geotechnical investigations, slope stability analysis, and geologic mapping for the 200-acre industrial and research park near the County airport. Responsible for a geotechnical investigation, analysis, and report preparation for Lot 19 of the adjoining 91-acre Technology Park.
- SR 0208 interchange project in Grove City, PA for highway upgrades to the interstate interchange at the Grove City Mall, including a bridge over Interstate 79 and two intersections with SR 0258. Responsible for a geotechnical investigation, analysis, and report preparation for the interchange.

gai consultants

Shane Fisher, PE

Assistant Engineering Manager

Education

BS, Civil Engineering Technology, Fairmont State University, 2005

Registrations

Professional Engineer (PE): WV [redacted]; VA [redacted]; NC [redacted]; MD [redacted]

Skills

Civil Engineering

Drainage System Engineering and Design

Bridge Analysis and Design

Erosion and Sediment Control Permitting

Stormwater Management Permitting

Industry Experience

GAI Consultants, Inc., 2014-Present

West Virginia Department of Transportation, Division of Highways, 2008-2014

Potesta and Associates, 2005-2008

Glassworks WV, 2000-2002

Golden Bear Construction, 1996-1999

Teal Group Construction, 1992-1996

Professional Summary

Mr. Fisher specializes in civil engineering with experience in environmental permitting, the design and analysis of bridge structures, roadways, drainage systems, and sanitary and industrial water and wastewater systems. His experience meeting Federal Emergency Management Act (FEMA) requirements includes flood mapping, floodplain compliance, and construction monitoring for disaster-related funds. He has most recently been managing erosion and sediment (E&S) control, construction stormwater and roadway permitting duties for projects in both natural gas and overhead electric transmission lines in the Mid-Atlantic United States.

Mr. Fisher is skilled in MicroStation and InRoads for bridge and roadway design, and AutoCAD Civil 3D for preparing construction plans, grading, and civil site design. Early in his career, he was a construction superintendent and foreman responsible for coordinating laborers and carpenters, preparing as-built drawings for residential and commercial projects, and overseeing framing, painting, roofing, and electrical construction jobs.

Professional Experience

- UNT #1 of Teter Creek In-Lieu-Fee (ILF) Project, West Virginia Department of Environmental Protection (WVDEP), Barbour County, West Virginia. Assistant Engineering Manager responsible for E&S oversight and environmental permitting for the implementation of Phase I (Site Acquisition) and Phase II (Pre-Construction Design) of the approved ILF Mitigation Site. GAI is responsible for land acquisition, easement, preparation/ recording, survey, environmental baseline assessments, mitigation plan and design, permitting, and bidding document preparation.
- Responsible for design of water systems, including collection system design/rehabilitation and pumps stations. Conducted environmental permitting, hydrologic and hydraulic (H&H) analyses, and quality assurance/quality control monitoring. Developed Erosion and Sediment (E&S) Control Plans, Stormwater Pollution Prevention Plans (SWPPP), and Best Management Practice plans. Responsible for design and cost estimating for abandoned mine lands projects and industrial wastewater projects. FEMA work including Letter of Map Amendment (LOMA), flood mapping, floodplain management, and DFIRM database. Visualized and designed rain gardens, infiltration systems, and detention/retention ponds.

- Less Than 20’ Bridge Program, WVDOH, District Seven, West Virginia. Highway Engineer Associate responsible for the design and analysis of bridge structures, two summer co-op employees' inspections, all correspondence with external permitting agencies, and coordination of construction activities with the District's Heavy Maintenance Crew for bridge repairs and replacements. Performed civil site design using MicroStation and InRoads, stream hydrologic analysis using TR-55, HEC-RAS, and hydraulic analysis for bridge replacements. FEMA work included flood mapping, floodplain compliance, estimates, correspondence with FEMA, and construction monitoring for disaster related funds.
- Design and analysis of roadway drainage systems and grading plans, including roadway design projects and numerous new subdivisions. Civil site design using AutoCAD Civil 3D, including grading design, stormwater management plans, utilities, and erosion control plans. Geotechnical engineering, including subsurface explorations, slope stability analysis, and design. Surface and subsurface H&H evaluations, including stormwater runoff, peak discharge evaluations, stormwater detention analysis, and structure design.
- Numerous site-specific E&S control plans and SWPPP preparation in Pennsylvania, West Virginia, and Ohio. Task Manager for the development of and completing E&S Plans and SWPPP submission to the WVDEP for approval by the agency.
- Confidential Pipeline Project, Upshur and Barbour Counties, West Virginia. Task Manager for roadway permitting, submitted to the West Virginia Department of Transportation, Division of Highways (WVDOH), and SWPPP preparation and submission to the WVDEP.
- Site-Specific E&S Control Plans and SWPPP Projects, West Virginia, Pennsylvania, and Ohio. Task Manager for the development of and completing E&S Plans and SWPPP submission to the WVDEP for approval by the agency.
- Two 138kV Transmission Line Projects, West Virginia. Task Manager for two new 138kV transmission line projects. Scope of work included roadway permitting, SWPPP development, site registration, and WVDEP submission.
- 25-Acre Compression Station Project, Davidson County, North Carolina. Assistant Project Manager for E&S and stormwater management (SWM) analysis and design. Responsible for E&S and SWM analysis and design, which included channel design, pond design and outfall design.
- Environmental Permitting lead for 17-mile and 4-mile pipelines in Pennsylvania. Duties included E&S design as well as stormwater management design, which included both during construction and post-construction analysis and design. Analysis design includes channel, infiltration berm and outfall design at proposed compressor station.
- Confidential Pipeline Project, Virginia and North Carolina. Assistant Project Manager for E&S control and land development permitting for 40-acre pipe yards for this pipeline project crossing multiple states. Duties included: development of E&S plans, Virginia Stormwater Permitting (VSMP), land development permitting, and floodplain analysis submitted to agencies for approval.
- Commission, Assistant Superintendent. Assisted with a $2.1 million, 43-unit apartment complex project requiring building retro-fits due to severe earthquake damage and extensive renovations to entire dwelling structure in accordance with local code and commission specifications. Liaison between contractors, architect, project engineer, and county officials.

Affiliations

WVU/WVDOH Partnership Fiber Reinforced Polymer Advisory Committee (formerly)

American Society of Highway Engineers

American Society of Civil Engineers, Past President, current Branch Vice President, current WV Section Vice President

Mary Beth Berkes, PE, MS

Assistant Civil Technical Leader

Education

MS, Civil Engineering, Concentration in Coastal and Ocean Engineering, 2010, Oregon State University

BS, Civil Engineering, 2008, University of Pittsburgh

Registrations

Professional Engineer (PE): WV, PA, KY, OH

Certifications/Training

Rosgen I: Applied Fluvial Geomorphology, MT, 2016

Rosgen II: River Morphology and Applications, NC, 2017

Rosgen III: River Assessment and Monitoring, WV, 2018

Rosgen IV: River Restoration and Natural Channel Design, CO, 2019

Skills

Civil Engineering

Hydrology and Hydraulics

Dam Design and Hydraulic Analysis

Stream and Wetland Mitigation Design

Coastal and Ocean Engineering

Awards

2018 Young Professional of the Year – Society of American Military Engineers (SAME)

Industry Experience

GAI Consultants, Inc., 2010-Present

Oregon State University, Civil Engineering Department, 2008-2010

University of Pittsburgh, 2008

Professional Summary

Ms. Berkes specializes in stream restoration design, hydrologic and hydraulic (H&H) analyses, inundation studies and investigations, coastal engineering, and design of hydraulic structures. She has completed training on Natural Channel (Rosgen Levels I through IV), hydrologic and hydraulic permitting and procedures, and advanced HEC-RAS and scour analyses. She is proficient in HEC-RAS, HY-8, HEC-HMS, Hydraflow Hydrographs, DamSites, PondPack, StormCAD, and AutoCAD.

Ms. Berkes' interest in inundation and flooding began as an undergraduate researcher through conducting field reconnaissance in Thailand following the 2004 Indian Ocean Tsunami. This experience was further developed as a graduate student where she managed a large-scale experiment on wave forces and structural failures under tsunami inundation.

Professional Experience

- Stream Restoration Design for over 20 projects in West Virginia, ranging from headwater streams to large bank stabilization projects. Stream Restoration was designed using principals of fluvial geomorphology and Rosgen based methodology where applicable. Designs included hydraulic modeling to assess shear stress and sediment transport, design of structures for grade control and bank stabilization, and preparation of design reports and drawings.
- UNT #1 of Teter Creek In-Lieu-Fee (ILF) Project, West Virginia Department of Environmental Protection (WVDEP), Barbour County, West Virginia. Civil Engineer for the implementation of Phase I (Site Acquisition) and Phase II (Pre-Construction Design) of the approved ILF Mitigation Site. Engineering led tasks included design plan development for over 2.5 miles of stream restoration and enhancement reaches, and hydraulic modeling using RAS-Mapper to develop two dimensional plots for floodplain inundation mapping and areas of critical velocity and shear stress. GAI was responsible for land acquisition, easement, preparation/ recording, survey, environmental baseline assessments, mitigation plan and design, permitting, and bidding document preparation.
- On- and Off-Site Restoration and Mitigation Plan, West Virginia. GAI is responsible for collecting physical, chemical, and biological data necessary for calculation of Ohio Stream and Wetland Valuation Metric and preparation of the Conceptual Mitigation Plan.

- JC Cruikshank Memorial Bridge Project, West Virginia Department of Transportation, Division of Highways (WVDOH), Ivydale, Clay County, West Virginia. Technical Advisor. Responsible for hydraulic modeling. GAI is conducting a PIE Study, which consists of the preparation of feasibility reports/studies and construction estimates for various alternatives, along with any subsequent surveying, mapping, and geotechnical engineering work that is necessary to develop a design study, contract plans and right-of-way acquisition plans. In addition, this work is anticipated to consist of an Environmental Assessment (EA)/Finding of No Significant Impact (FONSI) environmental document in compliance with the National Environmental Policy Act (NEPA).
- H&H Culvert Extension Evaluation Project, Pennsylvania Turnpike, Bedford County, Pennsylvania. H&H Technical Lead. Five culverts crossing the Pennsylvania Turnpike will be extended due to proposed widening of the roadway. The extensions were designed to meet Federal Emergency Management Agency (FEMA), Pennsylvania Department of Environmental Protection (PaDEP), and Pennsylvania Department of Transportation (PennDOT) design criteria, and several culverts were proposed to slip-lined due to their deteriorating interior. The upstream and downstream extensions were modeled in HY-8 to evaluate headwater and velocity, and the entire culvert system was modeled using HEC-22 methodology to evaluate losses of the manholes connecting the culvert system.
- McMillan Marsh ILF Mitigation Project, Wisconsin Department of Natural Resources (WDNR), Marathon County, Wisconsin. Project Engineer. GAI is responsible for collecting physical, chemical, and biological data necessary for calculation of Ohio Stream and Wetland Valuation Metric and preparation of the Conceptual Mitigation Plan.
- Indianola Flood Risk Assessment Project, Allegheny County, Pennsylvania. H&H Technical Lead. GAI conducted an evaluation of flood risk and potential mitigation measures for a manufacturing facility due to proposed development on a neighboring property within a FEMA floodplain of an adjacent stream. GAI performed a peer review of the neighboring developer's hydraulic model and also developed our own hydraulic model (HEC-RAS analysis) to determine the flood elevations and corresponding risk to the client's property for various flood events. A report was prepared providing a qualitative assessment of flood risk as a result of the proposed development and provided mitigation recommendations.
- MP 149.5 to 155.5 Total Mainline Reconstruction Project, Pennsylvania Turnpike Commission, Bedford County, Pennsylvania. Civil Engineering Lead. Due to proposed widening of the Pennsylvania Turnpike the outlet of a culvert was shifted, and stream relocation was required to connect the proposed culvert to the existing downstream channel. Stream segments were design as natural channels using Rosgen based Methodology. The relocated channel was evaluated for shear stresses and was designed so that water surfaces elevations for the 100-year storm would not be increased from existing conditions.
- Bradford Dam No. 2 Wetland Mitigation Plan, Bradford City Water Authority, McKean County, Pennsylvania. H&H Technical Lead. Assessment of hydrologic conditions, infiltration, and evaporation was conducted to establish a water budget for two proposed wetland mitigation sites along an access road to Bradford Dam No 2. One of the proposed wetlands was divided into three cells, where Agri-Drain devices and level spreaders were designed to manage stormwater and to help effectively distribute runoff throughout the wetland systems. In addition, seed mixtures and planting plans were developed to be included in the wetland mitigation plan.
- Wetland Mitigation Plan at the intersection of State Route 0228 and Interstate 79, Pennsylvania Department of Transportation (PennDOT), District 10, Cranberry, Pennsylvania. H&H Technical Lead. Four stormwater ponds were designed to collect runoff from the interchange ramps and discharge into the wetland system at a controlled rate. The Wetland Mitigation Plan also incorporated stream relocation, and the relocated stream was meandered throughout the site to create a wetland environment. An Agri-Drain was designed to hold smaller storm events in the wetland system and to effectively discharge the 2-year, 24-hour flow from the relocated stream. Deliverables included a Planting Plan, H&H Calculation package, Wetland Mitigation Plan, and Wetland Mitigation Details Sheets.

gai consultants

Kerry Frech, PE, MEng

Civil Technical Leader

Education

MEng, Environmental Engineering, 1978,
Cornell University

BS, Civil Engineering, 1977,
Cornell University

Registrations

Professional Engineer (PE): PA - 1983,
[redacted], WV [redacted]

Skills

Hydrology and Hydraulics

Stormwater Management

Water Quality Analyses

Industry Experience

GAI Consultants, 1978-Present

Professional Summary

Mr. Frech specializes in applying hydrologic and hydraulic principles to the development of water and land related resources. He has prepared numerous state and federal permit applications for public and governmental entities and for private industry. His project experience ranges from planning and feasibility-level studies to design and the preparation of construction documents. His experience with hydrologic and hydraulic modeling includes HEC-RAS, HEC-HMS, HEC 1, HEC 2, DAMBRK, PSRM, SCS TR 20 and TR 55, RIVER2, WSPRO, and the Water Resources Council's Bulletin 17B.

Select Professional Experience

- Fishing Creek Restoration and Maude Mine Reclamation Project, South Fayette Conservation Group and Pennsylvania Department of Environmental Protection (PaDEP), Bureau of Abandoned Mine Reclamation. Project Engineer Responsible for the design and preparation of construction documents for the reclamation of a mining site. The site included several highwalls, a stream channel that discharged to an open mine portal, and abandoned coal processing structures. Restoration included diversion and restoration of stream channels, mine portal sealing, highwall elimination, and general site cleanup, drainage improvements, and restoration. The project was awarded the 2008 Appalachian Region AMR award.
- Webster Mine Ecosystem, U.S. Army Corps of Engineers (USACE), Pittsburgh District, Nanty Glo, Pennsylvania. Ecosystem restoration project to treat acid mine discharge from the mine to improve overall water quality in the Blacklick Creek drainage basin. Project engineer for final design and preparation of construction documents.
- Lower Kanawha River Basin Project, USACE, Huntington District, West Virginia. Project Engineer. Responsible for water supply survey investigations in the lower Kanawha River Basin. Identified and characterized potential water supply reservoir sites, including development of low flow frequency duration relationships and economic relationships for further evaluation of the sites.
- Romney Bridge Replacement (US 50) over the Potomac River, West Virginia Department of Transportation, Division of Highways (WVDOH), Hampshire County, West Virginia. Principal Engineer. Responsible for hydrologic and hydraulic (H&H) analyses for the proposed bridge replacement.

- Duhring Street Bridge Project, West Virginia Department of Transportation, Division of Highways (WVDOH), Mercer County West Virginia. Project Engineer. Responsible for reviewing the hydrologic and hydraulic (H&H) analyses for the Final Hydraulic Design Report.
- Moorefield Community on the Potomac River Project, USACE, Baltmore, District, Moorefield, West Virginia. Project Engineer. Reconnaissance studies at the confluence of the South Branch and the South Fork of the South Branch of the Potomac River for a community that incurred $23M in damages in a 400-year flood. Responsible for reconnaissance and feasibility level flood protection studies including field reconnaissance, survey, two-river system HEC 2 modeling, interior drainage, cost estimates, and reports. Development of an economically feasible and implementable flood protection plan.
- Power Station Disposal Site, Pleasants County, West Virginia. Disposal site design for a 250-foot high sludge disposal impoundment at the power station, including an Emergency Action Plan (EAP). Project Engineer responsible for developing a reservoir management plan for the 300-acre residual waste impoundment. The plan included design of a siphon discharge system, and modifications to the principal spillway and to the operation of the emergency spillway. Project engineer responsible for emergency action plan technical analyses and inundation studies to satisfy state requirements for a solid waste (wet) disposal facility. Project engineer for landfill expansions, including extension of the reservoir spillway pipe and design of pump station for landfill discharges to the station's treatment plant.
- Petersburg Community on the South Branch of the Potomac River, USACE, Baltimore District, Grant County, West Virginia. Project Engineer. Reconnaissance study project requiring engineering analysis for flood protection for local community that incurred $18M in damages in a 400-year flood event.
- Lake Lynn Dam, Allegheny Power Service Corporation, Monongalia County, West Virginia. Project Engineer. Dam analysis project to perform downstream routing procedures using HEC-1 and DAMBRK models. Responsible for hydrologic and hydraulic analyses and inundation studies performed as part of the FERC safety evaluations. Preparation of technical analyses and inundation mapping for the emergency action plan. Calibration of hydrologic and hydraulic analyses based on the November 1985 flood.
- Monongahela Riverfront Development Sites, USACE, Pittsburgh District, Marion and Monongalia Counties, West Virginia. Comprehensive studies for potential development along 37 miles of the Monongahela River (700+ sites) from Fairmont, West Virginia to the West Virginia/Pennsylvania State line.
- SR 0048, Sections A11 and A16, Mosside Boulevard PennDOT, District 11-0. Allegheny County, Pennsylvania. Bridge and roadway designs to replace two bridges and approach roadway over Turtle Creek, Norfolk Southern Railroad, and a local service road, including designs for relocation of 1,000 feet of natural stream channel. Project engineer responsible for H&H analyses, stormwater management, and assistance with stream restoration using geomorphological principles.
- Flaugherty Run Watershed, Allegheny County Department of Economic and Community Development, Allegheny and Beaver Counties, Pennsylvania. Project Manager responsible for preparing the Act 167 Watershed Stormwater Management Plan for the Watershed, an 8.9 square-mile tributary of the Ohio River.
- Mon-Fayette Expressway (Section 52J), Pennsylvania Turnpike Commission (PTC), Washington and Allegheny Counties, Pennsylvania. Highway and roadway design project for 1.7 miles of four-lane limited access expressway, and 1.2 miles of local road with a multi-use trail. Project Engineer. Responsible for H&H analyses and reports, and preparation of a CLOMR to FEMA, for mainline and Peters Creek Road Ext. Awarded: 2002 Engineers' Society of Western Pennsylvania Awards Distinction for Transportation Category Project of the Year, 2002 American Society of Highway Engineers Outstanding Highway Engineering Award, and 2003 PTC PA Partnership Award in the Highway Quality Project Recognition Category.

Affiliations

American Society of Civil Engineers (ASCE), Member

American Water Resources Association (AWRA)

Adam Scheller, PE, MS, MBA

Engineering Manager

Education

MBA, Point Park University

MS, Civil and Environmental Engineering, 2007, University of Pittsburgh

BS, Civil and Environmental Engineering, 2005, University of Pittsburgh

Registrations

Professional Engineer (PE): PA – 2015

Skills

Civil and Environmental Engineering

Dam Design and Hydraulic Analysis

Dam Bream Analysis

Environmental Permitting

Hydrologic and Hydraulic Design

Stormwater Management

Erosion and Sedimentation Control

Certifications / Training

ASCE Pumping System Design for Civil Engineers, 2012

ASCE Dam Breach Analysis Using HEC-RAS, 2010

PennDOT H&H and Permitting Procedures, NTM Engineering, 2009

OSHA 10-Hour Safety

Contech Erosion Control Design Short Course, 2008

ASCE/EWRI-GIS/GPS Applications for Combined and Sanitary Sewer Systems, 2007

Industry Experience

GAI Consultants, Inc., 2007-Present

University of Pittsburgh, 2005-2007

Professional Summary

Mr. Scheller specializes in hydrology and hydraulics, stormwater management (SWM), and erosion and sediment control (E&SC), as well as general civil engineering. He provides hydrologic and hydraulic (H&H) design and analysis for bridges, culverts, channels, ponds, dams, stream encroachments, impoundments and wetlands. Mr. Scheller utilizes the latest computer models to analyze pumping systems, gravity flow (conduit and open channel), storage facilities, and hypothetical dam breach events.

Mr. Scheller assists with Commonwealth of Pennsylvania and United States Army Corps of Engineers Joint Permit application preparation, including dam, culvert, and general permits, and develops E&SC Plans for construction activities. He also prepares Water Quality Management Permits

Mr. Scheller's experience with hydrologic/hydraulic computer models includes: HEC-RAS, HEC-HMS, FLO-2D, Storm CAD, SCS TR-20, SCS TR-55, HEC-1, HEC-2, DAMBRK, PondPack, Hydraflow, and HY-8.

Select Professional Experience

- Jonathan Run Acid Water Treatment Plant Design for the University of Pittsburgh in Centre County, Pennsylvania. Assisted in design of an active treatment system for the project, including design recommendations, calculations, and writing of a specification package.
- SR 885 Culvert Replacements over Unnamed Tributaries to Streets Run for the Pennsylvania Department of Transportation (PennDOT), District 11-0, in Allegheny County, PA. Project Engineer responsible for H&H analyses for the replacement of four structures along a single stream network. Analyses included development of a continuous HEC-RAS hydraulic model to analyze the entire reach and design of a 1,200-foot long open channel to replace an existing culvert. A single H&H Report was submitted and the project was granted the required permits.
- Solid Waste Management Facility, Wise County, Virginia. Engineering analysis for stabilization of underground coal mines beneath proposed waste management facility. Prepared a certification report for the mine stabilization program.

- Final Hydraulic Design Report for the Yon Peraldo Memorial Bridge and the Duhring Street Bridge for the West Virginia Department of Transportation in Mercer County, West Virginia. Project Engineer responsible for reviewing the H&H analyses prepared by LA Gates Company for consistency with GAI structure design and permitting requirements.
- Culvert for the proposed relocation of Valley Church Road over Rush Run in Morris Township, Greene County, Pennsylvania. Project Engineer responsible for H&H analysis of a new 92-foot long culvert and other associated features of a roadway modification project. The H&H Report was submitted with the Joint Permit Application.
- Twilight Compressor Station Culvert for a proposed access road over a tributary to Pike Run in West Pike Run Township, Washington County, Pennsylvania. Project Engineer responsible for H&H analysis of the replacement structure and submission of the H&H Report. The proposed structure is to replace a previously permitted temporary crossing.
- Culvert for a proposed access road over Pierce Brook for Trans-Allegheny Interstate Line Company in Keating Township, McKean County, Pennsylvania. Project Engineer responsible for H&H analysis of a new 95-foot-long box culvert carrying a proposed access road to the Pierce Brook Substation. The project was located in a FEMA approximate study area. The H&H Report was submitted with the Joint Permit Application.
- SR 0019 Sections B05 and B06 Bridge Replacements for PennDOT, District 1-0, in Mercer County, Pennsylvania. Project Engineer responsible for H&H analysis of the replacement of B06 and review of the analysis conducted for the replacement of B05. H&H Reports were submitted for each structure. Analysis of B06 included a multiple opening model in HEC-RAS. Permits have been granted for both projects and construction for B05 has begun.
- SR 4009 Section A10 over Girty's Run, Babcock Boulevard Bridge Replacement for PennDOT, District 11-0, in Allegheny County, Pennsylvania. Project Engineer responsible for H&H analysis of the replacement structure, which was in a detailed FEMA study zone and required construction of a temporary pedestrian bridge.
- S.R. 0051 and S.R. 0088 Intersection Improvements Project, PennDOT, District 11-0, in Allegheny County, Pennsylvania. Intersection improvements project requiring environmental, traffic, geotechnical, and hydrologic studies. Project Engineer responsible for H&H analyses for the replacement and construction of multiple structures over Saw Mill Run and Weyman Run. Portions of the project were in a detailed FEMA study area.
- SR 0228 / SR 0079 Interchange Project for PennDOT, District 10-0, in Butler County, Pennsylvania. Project engineer responsible for the H&H analysis and report submittal for modification of three culverts at the interchange as well as a wetland construction and stream relocation.
- SR 0119 Bridge Replacement over Big Run for PennDOT, District 10-0, in Jefferson County, Pennsylvania. Project Engineer responsible for H&H analysis of the replacement structure, and submission of an H&H Report.
- Flue Gas Desulphurization (FGD) and Gypsum Area Sump at a Generating Station in New Florence, Pennsylvania. Project Engineer responsible for H&H Design of a 1.5-million-gallon concrete storage sump to replace an existing stormwater pond. Design was included in the Water Quality Management Permit for the facility as well as the construction package and included detailed analysis of the water balance associated with the FGD system and Ash Handling system.
- Logan County Flood Assessments & FEMA Flood Reconstruction Projects, located in Logan County, West Virginia for the Logan County Commission. H&H Technical Lead. GAI provided engineering services to support several flood mitigation related projects planned to be funded by the FEMA Hazard Mitigation Grant Program. Services included HEC-RAS Modeling, Flood Protection, Stormwater Management, Construction Engineering and Inspection, Foundation Studies, Civil/Site Engineering, and Surveying.

Christopher Hennessey, PE, MS, LEED® AP

Engineering Manager

Education

MS, Structural Engineering, 2003, Virginia Tech

BS, Civil Engineering, 2001, University of Tennessee

Registrations

Professional Engineer (PE): PA: [redacted], VA: [redacted], TX: [redacted] KY [redacted]

Certifications

Leadership in Energy and Environmental Design Accredited Professional (LEED® AP)

Skills

Structural Engineering, Design and Analysis

Foundation and Retaining Wall Engineering, Design and Analysis

Structural Investigations, Evaluations, Rehabilitations, and Repairs

Progressive Collapse Resistance, Blast Resistance, and Physical Security

Green Building Systems

Industry Experience

GAI Consultants, Inc., 2013-Present

WBCM, LLC, 2011-2013

Woods-Peacock Engineering Consultants, 2009-2011

O'Donnell & Naccarto, Inc., 2005-2009

Haynes Whaley Associates, 2003-2005

Tennessee Valley Authority, 2001, 2002 (Internships)

Professional Summary

Mr. Hennessey specializes in structural investigations, structural rehabilitations, structural evaluations, and the design of structural building systems. His experience includes the modeling, design, and detailing of structural steel, reinforced concrete, post-tensioned concrete, tilt-up concrete panels, deep foundations, mat foundations, retaining walls, masonry, and wood framing. Mr. Hennessey is focused on client satisfaction, financial management and technically sound drawings, specifications and reports. His experience includes the complete structural design of complex projects, from the selection of structural systems and definition of design criteria to the preparation of detailed calculations, specifications and construction drawings. Additional experience includes forensic evaluations, building demolitions, bridge and highway projects, and construction administration. He has a working knowledge of the latest design manuals for steel, concrete, masonry, and timber, as well as the International Building Code. Mr. Hennessey is proficient at ETABS, SAP, RISA, STAAD, RAM Elements, Ram Structural, RAM Concept, ADAPT, SAFE, TEDDS, ENERCALC, and AutoCAD.

Select Professional Experience

- Cresson Acid Mine Drainage Treatment Facility, Cresson, Pennsylvania. Engineer responsible for structural design of 6.3 million gallons per day (MGD) capacity water treatment facility that mitigates the effluent from three abandoned coal mines. Includes the design of reinforced concrete tank walls and mat foundations, equipment pads, steel framed elevated access platforms and pipe supports, two masonry bearing wall buildings with steel roof joists, and structural supports for a solar array.
- Effluent Limitation Guideline (ELG) compliance support at coal fired generation stations. Mr. Hennessey provided tank evaluation and structural design support relating primarily to tank repairs and foundations. GAI provided the clients with 30% design packages for storage and treatment of the flue gas desulfurization (FGD) wastewater to comply with the National Pollutant Discharge Elimination System (NPDES) permits that became effective in 2018 at the stations. The scope of the project included biological treatment vendor coordination, pump selection, existing tank evaluations, pipeline routing and design, and engineering estimates of probable costs. The 30% design package included process, mechanical, structural, and civil design drawings, preliminary specifications and design basis, and a project permitting matrix.

- Foundation and Structural Platform Modifications, ALCOSAN, Pittsburgh, Pennsylvania. Structural Engineer responsible for the foundation design for two new tanks (acid and caustic) within the existing water treatment facility. The project also included the modification of the building and mezzanine walkway steel framing, in order to provide space for installation and operation of the new tanks.
- Apex Oil Terminal Condition Assessment, Weirton, West Virginia. Engineer responsible for structural condition assessment of existing sheet pile docking facility and mooring dolphins used to load petroleum barges. Included visual inspection of the structures, below water non-destructive testing conducted by divers, and a condition assessment report.
- Intake Structure Modifications, Nevada. Lead Structural Engineer. GAI assisted our client in the evaluation of options to extend intake piping approximately 80 feet further into a lake. GAI conducted a site visit to make observations and take photographs of the existing intake facility and developed cost estimates based on preliminary structural and geotechnical calculations. GAI provided evaluation of existing equipment and selection of new pumps, piping, and appurtenances; analysis of existing structure and development of extension options; and analysis of existing conditions, including existing foundations and modifications to allow for structure extension.
- University Avenue Parking Garage Condition Assessment and Repair Project, Morgantown Parking Authority, Morgantown, Monongahela County, West Virginia. Project Manager. GAI performed a visual and sounding survey of the parking garage to identify areas of deficiencies. Prepared an Assessment Report which summarized findings, repair recommendations, and a table of deficiencies with repair needs. GAI is currently developing the repair drawings and specifications based on the recommendations from the condition assessment.
- Department of Homeland Security Data Center, Virginia. Engineer responsible for Design/Build renovation of existing 177,000 SF manufacturing facility and construction of new support buildings and controlled perimeter security structures on site. Included design of steel, concrete and masonry structures, modifications of existing framing, foundation modifications to accommodate underground duct banks & MEP, and intensive coordination with architect, other engineering disciplines, and general contractor.
- Department of State Data Center, Colorado. Design/Build of a new 114,000 SF facility designed to resist progressive collapse. Engineer responsible for design of caissons, grade beams, two-way structural slabs, development of loading criteria for precast concrete columns, double-tees, and walls, development of progressive collapse resisting details, and coordination with architect, other engineering disciplines, contractor, and precast concrete manufacturer.
- Shaner Industries, Metal Finned Pipe Foundation (MFPF) Evaluation. Engineer responsible for creating MathCAD calculation programs for the design of MFPF foundations for the support of solar panel arrays, highway signs, and Luminaries, per AASHTO and PennDOT requirements.
- Industrial Facility Condition Assessment, Pittsburgh, Pennsylvania. Project Manager/Engineer responsible for structural condition assessment of a 90-year-old, 150,000 SF, high bay, steel framed industrial building at a former steel plant. Included multiple site visits, a structural condition assessment report, repair recommendations, and bay studies for the redevelopment of the building into a sustainable industrial facility as part of a Redevelopment Project for the City of Pittsburgh.
- United States Steel Corporation, Clairton Works, Clairton, PA. Engineer responsible for structural condition assessment of interior brick masonry liners of two existing coke quenching towers. Included multiple site visits and a structural condition assessment report.
- Graphite Electrode Manufacturing Facility, St. Mary's, Pennsylvania. Engineer responsible for structural condition assessment of existing 90,000 SF, high bay, steel framed industrial building. Included multiple site visits, a structural condition assessment report, an evaluation of the adequacy of the structure for rehabilitation, and repair recommendations.

Joseph States, PE, MS

Assistant Engineering Manager

Education

MS, Structural Engineering, 2011, Lehigh University

BS, Civil and Environmental Engineering, 2009, Carnegie Mellon University

Registrations

Professional Engineer (PE): PA, OH

Skills

Structural Engineering Design and Analysis

Foundations Engineering Analysis and Design

Retaining Wall System Design

Industry Experience

GAI Consultants, Inc., 2011-Present

Paul C. Rizzo Associates, Inc., 2009

Geo-Solutions, 2008

Professional Summary

Mr. States specializes in structural engineering and design of steel and concrete structures, structural assessments, and structural rehabilitation. His experience includes complex steel framing systems, mechanical and electrical equipment support, concrete mat foundations, clarifiers and other environmental concrete structures, parking garage assessment and rehabilitation projects, transmission line and substation structures. He is proficient in MathCAD, AutoCAD, and RISA and has worked with He is proficient in MathCAD, AutoCAD, and RISA and has worked with REVIT, Microstation, PLS-CADD, STAAD Pro, and GT Strudl.

Select Professional Experience

- Water Treatment Facility Structure Design in Cresson, Pennsylvania for the Pennsylvania Department of Environmental Protection. Designed structural elements of an acid mine drainage treatment plant including a concrete clarifier, steel mezzanine and pipe bridge, and concrete foundations for various tanks and pieces of equipment.
- Substation Expansion Foundation Design Project, Marion County, West Virginia. Designed pile and mat foundations for substation equipment with a leveling system to accommodate settlement due to anticipated long-wall mining.
- Effluent Limitation Guidelines (ELG) compliance support at coal fired generation stations, Maryland. Engineer responsible for tank evaluation and structural design support relating primarily to tank repairs and foundations. GAI provided the clients with 30% design packages for storage and treatment of the flue gas desulfurization (FGD) wastewater to comply with the National Pollutant Discharge Elimination System (NPDES) permits that became effective in 2018 at the stations. The scope of the project included biological treatment vendor coordination, pump selection, existing tank evaluations, pipeline routing and design, and engineering estimates of probable costs. The 30% design package included process, mechanical, structural, and civil design drawings, preliminary specifications and design basis, and a project permitting matrix.

- University Avenue Parking Garage, Morgantown Parking Authority, Morgantown, West Virginia. Performed a condition assessment of the 4-story post tensioned, cast-in-place concrete parking garage. The condition assessment included performing a visual and sounding survey on the top and underside of the garage slabs, beams, columns and slab on grade. GAI also observed the condition of the elevator, the stair towers and existing garage drainage. Prepared a condition assessment report which included repair recommendations and classified each repair as immediate, short-term. (within one year) or long-term repair (one to five years). GAI prepared an Engineers Opinion of Probable Construction costs for the proposed repairs. GAI also prepared repair construction drawings and specifications.
- Full-Service Facilities Engineering Program, located at U.S. Government Facilities in the United States. Structural Engineer for over 25 projects, providing conceptual and final design packages for structural and architectural systems. Projects range from programing and design services for individual buildings and campus wide systems, with respect to facility expansion, modification, and demolition projects. Type of buildings include high bay testing laborites, manufacturing facilities, office buildings, maintenance facilities, and emergency response/security facilities. Design work included REVIT models and RISA analysis models.
- Engineering services to assist in providing power for Condensate Systems in Marshall and Wetzel Counties, West Virginia. Prepared site maps and cost estimates to provide three-phase power to more than 30 gas pipeline Central Receipt Point and pump station locations.
- Basement Storage Room Water Infiltration Remediation for the University of Pittsburgh, Pittsburgh, Pennsylvania. Engineer responsible for investigation to determine the cause of water infiltration in a basement room under a parking lot. GAI then prepared repair construction drawings and specifications for the remediation of the water infiltration.
- Washington County Courthouse Square Parking Garage Assessment, Washington County, Pennsylvania. Performed a condition assessment for the three-level, 125,000 SF parking garage constructed in 1980. The garage consists of cast-in-place concrete columns and girders, one-way concrete floor joists, and concrete floor slabs. Tasks included; reviewing original parking garage construction drawings; performing a chain-drag survey to locate areas of delamination of the elevated slabs; performing a visual survey of the tops of the elevated slabs and the slab-on-grade; performing soundings of the underside of the beams and slabs at the location of the delamination; performing a visual and sounding survey of the garage columns; performing photographic documentation of typical deterioration; remediation recommendations; letter report to client. The second phase of the project included repair construction drawings and specifications.
- Soldiers and Sailors Parking Garage Condition Assessment and Stabilization in Pittsburgh, Pennsylvania for the University of Pittsburgh. Structural Engineer responsible for structural assessment of the underground basement walls and floors, a forensic assessment to determine the source of water infiltration into the garage, and stabilization of an air intake shaft where deterioration has occurred.
- 20 Stanwix Street Façade Inspection, Pittsburgh, Pennsylvania. Engineer responsible for interior and exterior inspection of façade on a 20-story cast-in-place concrete high-rise office building. Prepared a condition assessment report which included repair recommendations and conducted a follow-up inspection five years after the first.
- Bradford Dam Rehabilitation in Pennsylvania for Bradford City Water Authority. Provided structural design and assembled structural drawings for rehabilitation and extension of stilling basin.
- Cross Creek Dam Sluice Gate Repair in Washington County, Pennsylvania for the Washington County Planning Commission. Designed sluice gate replacement including the development of specifications and drawings.

Alex Cook

Senior Project Environmental Specialist

Education

BS, Biology, 2006, West Virginia State University

Skills

Environmental Investigation, Sampling, Analysis

Wetland Delineation

Environmental Permitting

Threatened and Endangered Species Surveys

Certifications / Training

Approved Surveyor for Running Buffalo Clover, West Virginia Division of Natural Resources

Wetland Delineation Training, North Carolina State University, 2008

NEPA and Transportation Decision Making, National Highway Institute (USDOT/ FHWA), 2009

Ohio EPA QHEI Training, Ohio EPA, 2008

24-hour MSHA Training

Industry Experience

GAI Consultants, Inc., 2014-Present

Michael Baker, 2007-2014

Professional Summary

Mr. Cook specializes in environmental and biological surveys and field assessments for private and public clients, including wetland delineations, jurisdictional stream determinations, vegetation surveys, benthic and water quality sampling, fish and herpetology studies, and threatened and endangered species surveys. He is familiar with current West Virginia and federal regulations, including the Section 401 and 404 permitting process [Clean Water Act (CWA)] and Section 7 consultation [Endangered Species Act (ESA)]. He has also been involved in drafting technical reports and National Environmental Policy Act (NEPA) documents for numerous large transportation and natural resource related projects.

Mr. Cook demonstrates a strong knowledge of current federal, state, and local regulations pertaining to permitting and agency coordination for environmental and natural resource concerns relating to surface waters and navigable rivers, floodplains, national forests, and threatened and endangered species, among other subjects. He has also helped develop, plan, permit, and monitor several large stream and wetland mitigation projects for both public and private clients.

Professional Experience

- Implemented and performed bi-annual Narrative Water Quality assessments (NPDES compliance) for a proposed surface mine project that included habitat assessments, water quality sampling, fish surveys, benthic macroinvertebrate surveys, and geomorphic and sediment transport studies following West Virginia Department of Environmental Protection (WVDEP) and federal protocols.
- UNT #1 of Teter Creek, Phase I (Site Acquisition) and Phase II (Pre-Construction Design) In-Lieu-Fee (ILF) Stream and Wetland Mitigation Program, WVDEP, Barbour County, West Virginia. Environmental Lead: Responsible for environmental tasks including stream and wetland delineations, stream assessments (for habitat, hydrogeomorphology, water quality, and benthic macroinvertebrates), environmental permitting (U.S. Army Corps of Engineers (USACE)/404 permit, WVDEP 401 certification, U.S. Fish and Wildlife Service (USFWS) Section 7 coordination, etc.), and mitigation calculations using West Virginia Stream and Wetland Valuation Metric to determine mitigation debits from impacts and mitigation credits for proposed restoration activities.
- Conducted wetland delineations and vegetation surveys for several constructed compensatory wetland sites in West Virginia to evaluate and report fulfillment of mitigation success criteria.

- City of Nitro Streambank Restoration Project, City of Nitro, Nitro, West Virginia. Environmental Permitting Lead: Responsible for supplemental stream and wetland delineations, stream assessments (for habitat, hydrogeomorphology, water quality, and benthic macroinvertebrates), mitigation calculations using West Virginia Stream and Wetland Valuation Metric to determine mitigation debits (for impacts), and environmental permitting including the U.S. Army Corps of Engineers (USACE)/404 authorization and West Virginia Department of Environmental Protection (WVDEP)/401 certification. The project involved land acquisition, easement, preparation/recording, survey, environmental baseline assessments, mitigation plan and design, permitting, and bidder document preparation.
- On- and Off-Site Restoration and Mitigation Plan, West Virginia. Environmental Lead: Responsible for environmental tasks including stream and wetland delineations, stream assessments (for habitat, hydrogeomorphology, water quality, and benthic macroinvertebrates), environmental permitting (U.S. Army Corps of Engineers (USACE)/404, West Virginia Department of Environmental Protection (WVDEP) 401 certification, U.S. Fish and Wildlife Service (USFWS) Section 7 coordination, etc.), and mitigation calculations using the West Virginia Stream and Wetland Valuation Metric to determine mitigation debits from impacts and mitigation credits for proposed restoration activities.
- Conducted routine (monthly) monitoring of compensatory wetland sites in West Virginia to satisfy mitigation monitoring conditions for specific projects. Routine assessments involved groundwater monitoring, benthic macroinvertebrate sampling, amphibian surveys, various vegetation surveys, and annual wetland determinations.
- Conducted various stream and wetland assessments in conjunction with the Stream and Wetland Valuation Metric (SWVM) including hydrogeomorphic assessments (HGM), Environmental Protection Agency Rabid Bioassessment Protocols (RBPs) habitat assessment valuations (HAV), various water chemistry analyses, benthic macroinvertebrate sampling – for the purpose of generating a West Virginia Stream Condition Index (WVSCI), and surface water delineations to calculate mitigation requirements for individual permits on multiple projects and to establish credits for work related to mitigation banks in West Virginia.
- Assisted in habitat identification surveys, mistnet surveys, agency coordination, and subsequent reporting for the endangered Indiana Bat (*Myotis sodalis)* on several transportation and natural resources related projects.
- Conducted habitat identification and implemented project specific conservation measures pertaining to a Memorandum of Understanding and Cooperator Agreement for the formally listed West Virginia Northern Flying Squirrel (*Glaucomys sabrinus fuscus*) on a large transportation project in West Virginia.
- Conducted several surveys for the endangered Running Buffalo Clover (*Trifolium stoloniferum*) on transportation projects in West Virginia.
- Contributed on several NEPA documents, including Environmental Assessments, Environmental Impact Statements, and technical reports pertaining to transportation related projects in West Virginia.
- Drafted and contributed on several Section 404 Permits (individual permits, individual permit modifications, and pre-construction notifications for nationwide permits) for multiple transportation, civil, and natural resource related projects.
- Buffalo Creek Mitigation Bank Project, Buffalo Creek Preserve, LLC, Southeastern Ohio. Environmental Survey Lead: Responsible for stream surveys including assessments for habitat, hydrogeomorphology, benthic macroinvertebrates (including quantitative surveys for ICI), water quality, and other state-specific assessments required by the Ohio Environmental Protection Agency (Headwater Habitat Evaluation [HHEI] and Quality Habitat Evaluation [QHEI]) ultimately to calculate potential mitigation credits using the Ohio Stream and Wetland Valuation Metric (SWVM) Version 1.0. GAI used these mitigation calculations to develop a Conceptual Mitigation Plan and Stream Credit Summary for a proposed mitigation bank site.

Jeffrey Polonoli

Senior Project Environmental Specialist

Education

BS, Secondary Education/Biology, 1997, California University of Pennsylvania

Skills

Environmental Investigation, Sampling, and Analysis

Wetland Delineation

Threatened and Endangered Plant Species Surveys and Identification

Habitat Assessment

Certifications / Training

40-hour USACE Wetland Delineation Training

Ohio Rapid Assessment for Wetlands Training

Wild Plant Management Permit, Pennsylvania DCNR, Bureau of Forestry

USFWS approved surveyor for *Scirpus ancistrochaetus* and *Isotria medeoloides* in Pennsylvania

USFWS approved surveyor for *Trifolium stoloniferum*, *Scirpus ancistrochaetus* and *Isotria medeoloides* in West Virginia

Field Indicators of Hydric Soils

24-hour MSHA Mining Hazard

John Franklin Lewis Herbarium, Herbarium Practice and Protocol

The Nature Conservancy of Missouri, Vegetative Identification of Midwestern Flora and Plant Communities

Industry Experience

GAI Consultants, 2011-Present

ASSET, Inc., 2003-2011

Professional Summary

Mr. Polonoli specializes in environmental investigations, including wetlands and streams, habitat assessments, rare, threatened, and endangered plant species, invasive plant species, and mitigation site monitoring. He has a strong background in plant identification and has performed numerous field surveys utilizing the Pennsylvania Department Conservation and Natural Resources (PADCNR) Protocol for Conducting Surveys for Plant Species of Special Concern. Mr. Polonoli has successfully completed botanical surveys in West Virginia, New York, Missouri, Pennsylvania, Ohio, and Maryland.

Mr. Polonoli worked as a field botanist for The Nature Conservancy in MO, and as acting Curator of Collections at Phipps Conservatory and Botanical Gardens where he developed and conducted an ex-situ native seed storage research project involving the collection, documentation, storage, and germination of seeds from rare, threatened, and endangered (RTE) plants.

Select Professional Experience

- Multiple West Virginia Stream and Wetland Identification and Delineation Projects, Beckley, Braxton, Doddridge, Harrison, Kanawha, Lewis, Marshall, Mason, Monongalia, and Wetzel Counties, West Virginia. Conducted environmental field review identifying streams and delineating wetlands.
- 69kV Transmission Line Rehab Project, Mason County, West Virginia. Conducted environmental field review identifying streams and delineating wetlands.
- Pipeline Uprate Project, Tucker County West Virginia. Developed mitigation protocol for transplanting and monitoring a population of *Carex haydenii* and completed the transplanting field task.
- Propane Pipeline Project, Brooke County, West Virginia. Assisted with Bat Maternity Roost Tree Field Survey.
- Propane Pipeline Pre-construction Project, Brooke, Marshall, and Ohio Counties, West Virginia. Conducted an Invasive Flora Survey within Castleman Run and Cross Creek Wildlife Management Areas within proposed pipeline ROW and prepared report of findings for submission to WVDCNR.
- Pipeline Uprate Project, Tucker County West Virginia. Completed invasive plant species field survey, and drafted report of findings.

- Wind Power Project, Fayette County, Pennsylvania. Conducted a mast survey and vegetation monitoring for known sites of Allegheny woodrat (*Neotoma magister*) and green salamander (*Aneides aeneus*).
- Wetland Mitigation Site Project, Calvert County, Maryland. Conducted Vegetation and Water Level monitoring within mitigation site as required by the Maryland Department of the Environment.
- Wind Energy Project, located in Bradford County, Pennsylvania. Conducted post-construction wetland monitoring, invasive plant control measures and prepare report of findings for agency submission.
- Expansion and Modernization Project, Beaver County, Pennsylvania. Created and conducted mitigation protocol for transplanting, and monitoring for a population of *Trillium flexipes*.
- Wetland Planting Project, located in Allegheny, Greene, Washington, and Westmoreland Counties, Pennsylvania. Conducted wetland habitat assessment and drafted comprehensive planting plants for mitigation of palustrine forested wetlands.
- Markee Creek Mitigation Site, Juniata County, Pennsylvania. Conducted Stream and Riparian Evaluations and prepared report letter submitted to Juniata Conservation District.
- Pipeline Project, Washington and Green Counties, Pennsylvania. Created and conducted mitigation protocol, transplanting, and monitoring for a population of *Trillium nivale*.
- Stream and Wetland Delineation Projects, Multiple Counties, Pennsylvania. Conducted environmental field review identifying streams and delineating wetlands. Assisted in preparing a Wetland Delineation and Stream Identification Report (WDSIR) for the Projects.
- Phipps Conservatory and Botanical Gardens, Pittsburgh, PA. Developed and conducted an ex-situ native seed storage research project involving the collection, documentation, storage, and germination of seeds from RTE plants of PA.
- Pleasant Hills Arboretum, Pleasant Hills, PA. Worked as an Independent Consultant to complete a botanical inventory and report of the Pleasant Hills Arboretum, establish permanent transect and zones, and outlined specific recommendations to help preserve the diversity of the existing native arboretum flora.
- The Nature Conservancy, Van Buren, Missouri. Worked as a Field Botanist conducting vegetative surveys within a 5,000+-acre preserve as part of a prescribed burn research project.
- John Franklin Lewis Herbarium of California University of PA, California, PA. Served as Herbarium Technician confirming specimen identification, mounting herbarium specimens, and photographic documentation.

Affiliations

Southern Appalachian Botanical Society

Botanical Society of Western Pennsylvania

gai consultants

Michael Holbert, PE

Engineering Manager

Education

BS, Civil Engineering (Summa Cum Laude), 1996, West Virginia University

Registrations

Professional Engineer (PE): WV – 2001 [redacted]; PA – 2005 [redacted] MD – 2017 [redacted]

Skills

Project Management

Transportation and Roadway Engineering

Surveying

Industry Experience

GAI Consultants, 2018-Present

AECOM, 2003-2018

Thrasher Engineering, Inc., 2002-2003

Hannah & Associates, Inc., 1999-2002

WVDOT, Division of Highways, District 1, 1997-1999

Professional Summary

A West Virginia, Pennsylvania, and Maryland-registered Professional Engineer (PE), Mr. Holbert serves as an Engineering Manager in GAI's Northeast Transportation group. His 24 years of transportation and roadway engineering experience include development of plans, specifications, and cost estimates; design study, preliminary engineering, and final engineering for numerous bridges and roadways. Clients/owners include West Virginia Department of Transportation, Division of Highways (WVDOH); Pennsylvania Department of Transportation (PennDOT); Pennsylvania Turnpike Commission (PTC); Port Authority of Allegheny County (PAAC); Maryland Department of Transportation State Highway Administration (MDOT SHA); City of Morgantown; Marshall University; Virginia Railway Express; and ENSR. Previous career roles have included serving as Deputy Project Manager, Civil Task Manager, Project Engineer, Lead Roadway Engineer, Civil Designer, and Survey Party Chief.

Professional Experience

- White Avenue Slip Project, City of Morgantown, Morgantown, West Virginia. Project Manager. Responsible for coordinating and managing fiscal and personnel aspects of the project. The project included the remediation and design of a roadway damaged by a landslide located in Morgantown, West Virginia. The project required stabilization of the hillside, road repair, drainage upgrades, and remediation below the slip.
- U.S. 340 Charles Town Road to Virginia State Line – Design-Build, Jefferson County, West Virginia. Lead Roadway Engineer. In partnership with ALL Construction, Inc., GAI is the designer for the $40 Million roadway expansion project for the WVDOH to widen the U.S. 340 corridor to four lanes from Charles Town, WV to the Virginia State line. The project improves the existing two-lane section of the U.S. 340 corridor for 5.5 miles.
- J.C. Cruikshank Memorial Bridge Replacement (CR 46), WVDOH, District 7, Clay County, West Virginia. Lead Roadway Engineer responsible for roadway, traffic, right-of-way (ROW), utilities, and drainage design. The GAI team was selected to conduct a design study for replacing an existing 4-span bridge over the Elk River. The existing bridge is 338 feet, six inches long. The study evaluated an upstream replacement alternative, a downstream replacement alternative, and an alternative that was to rehabilitate the existing structure.

- Upper Gassaway Bridge Replacement, WVDOH, District 7, Gassaway, West Virginia. Lead Roadway Engineer responsible for roadway, traffic, right-of-way (ROW), utilities, and drainage design. The GAI team was selected to provide engineering services for replacing an existing four-span bridge comprised of simple-span trusses over the Elk River. The existing bridge is 330 feet, six inches long and has many challenges like federally endangered mussels, close proximity of utilities, tight right-of-way (ROW), and existing roadway geometry. The proposed replacement structure is a multibeam continuous curved plate girder on drilled shaft piers and integral abutments.
- Miller Road Overpass, WVDOH District 2, Cabell County, West Virginia. Lead Roadway Engineer. Design-build project that involves the replacement of two existing bridges with two lanes in each direction with one 270-foot-long bridge with three lanes in each direction and associated approach roadway work. Responsible for roadway plans, roadway modeling, and cross sections.
- Playground Bridge (US 40), Ohio County, Indefinite Delivery/Indefinite Quantity (IDIQ), WVDOH District 6, West Virginia. Deputy Project Manager/Civil Task Manager responsible for the development of preliminary engineering and final engineering for the replacement of an existing bridge carrying US 40 over Little Wheeling Creek with a 65-foot-long spread box girder beam bridge. The project included approach roadway, utility coordination, and ROW acquisition plans.
- Harmon Creek to Pennsylvania State Line, Concrete Joint Repair (US 22), IDIQ, WVDOH District 6, Brooke County, West Virginia. Deputy Project Manager/Civil Task Manager responsible for the development of preliminary engineering and final engineering for the concrete joint repair on a three-mile section of US 22 from the Harmon Creek Exit to the Pennsylvania State Line.
- Parrs Camp Bridge (US 250), IDIQ, WVDOH District 6, Gilmer County, West Virginia. Deputy Project Manager/Civil Task Manager responsible for the development of a design study, preliminary engineering, and final engineering for the replacement of an existing bridge carrying US 250 over Parrs Run with a 20-foot by five-foot concrete box culvert. The project included approach roadway, utility coordination, and ROW acquisition plans.
- Fink Creek W-Beam Bridge (WV 47), WVDOH District 7, Gilmer County, West Virginia. Deputy Project Manager/Civil Task Manager responsible for the development of a design study, preliminary engineering, and final engineering for the replacement of an existing bridge carrying WV 47 over Fink Creek with a 175-foot-long steel girder bridge. The project included approach roadway, utility coordination, and ROW acquisition plans.
- Wells Bridge (WV 18), WVDOH District 6, Tyler County, West Virginia. Deputy Project Manager/Civil Task Manager responsible for the development of a design study, preliminary engineering, and final engineering for the replacement of an existing bridge carrying West Virginia Route 18 over Middle Island Creek with an 187.5-long steel girder bridge. The project included approach roadway, utility coordination, and ROW acquisition plans.
- McDonalds/Upper Plaza (WV 2), WVDOH District 6, Moundsville, Marshall County, West Virginia. Deputy Project Manager/Civil Task Manager responsible for the development of a design study, preliminary engineering, and final engineering for the McDonalds and Upper Plaza Bridges State Project No. S326-2-19.50. The project incorporated the needs of four components to the project along West Virginia Route 2 (WV 2) in Marshall County, within the city limits of Moundsville. The four project components consisted of the replacement of the McDonalds Bridge, removal of the Upper Plaza Bridge, addition of a continuous center two-way left-turn lane to West Virginia Route 2 (WV 2), and upgrade of the WV 2/US 250 intersection.
- Mon-Fayette Expressway (WV 43), WVDOH District 4, Monongalia County, West Virginia. Project Engineer during the plans, specifications, and estimates (PS&E) phase; and during the bidding and construction phases, which involved the design of 1.5 miles of four-lane controlled access mainline, two interchanges including a high-speed, tri-level connection with I-68, 1.9 miles of new or reconstructed local roads, and multiple bridge, box culverts, and retaining wall structures.

gai consultants

Rachel McCoy, PE

Project Engineer

Education

BS, Civil Engineering, 2014, West Virginia University Institute of Technology

Registrations

Professional Engineer (PE): WV – 2001 [redacted]; VA – 2018 [redacted]

Skills

Roadway Design

Maintenance of Traffic Design

Permitting

Utility Coordination

Cost Estimating

Plan Development

Industry Experience

GAI Consultants, 2018-Present

WVDOT, Division of Highways, 2014-2018; and Summers 2011, 2012, and 2013 (Intern)

Professional Summary

Ms. McCoy, a West Virginia and Virginia-registered Professional Engineer (PE), serves as a Project Engineer in GAI's Northeast Transportation group. Her experience includes roadway design, maintenance of traffic design, permitting, utility coordination, cost estimating, and plan development. Ms. McCoy's software and modeling experience includes: MicroStation, InRoads, OpenRoads, AutoCAD, AutoTURN, and FlowMaster.

Professional Experience

- White Avenue Slip Project, City of Morgantown, Morgantown, West Virginia. Roadway Engineering Support. The project included the remediation and design of a roadway damaged by a landslide located in Morgantown, West Virginia. The project required stabilization of the hillside, road repair, drainage upgrades, and remediation below the slip.
- Miller Road Overpass, WVDOH, Huntington, West Virginia. Project Engineer supporting engineering services for replacing an existing 3-span bridge on I-64 over CR 52/6 Miller Road. This design-build project has many challenges, such as existing roadway geometry and complex maintenance of traffic.
- Upper Gassaway Bridge Replacement, WVDOH, Gassaway, West Virginia. Project Engineer supporting engineering services for replacing an existing 4-span bridge composed of simple-span trusses over the Elk River. The existing bridge is 330.5 ft long, and the project area has many challenges, such as federally endangered mussels, close proximity of utilities, tight right-of-way (ROW), and existing roadway geometry. The proposed replacement structure is a multibeam continuous plate girder on drilled shaft piers and integral abutments.
- Chapel Road Bridge, WVDOH, Wheeling, West Virginia. Project Engineer supporting engineering services for a deck replacement on an existing single-span bridge over I-470. The existing bridge is 330.5 ft long, and the project area has challenges, such as existing roadway geometry and complex maintenance of traffic.
- Handley Area Bridge, WVDOH, Edray, West Virginia. Project Engineer supporting engineering services for replacing an existing single span bridge over Big Laurel Creek. The project area has many challenges, such as close proximity of utilities, tight ROW, maintenance of traffic via temporary detour, and existing roadway geometry.

- Mileground Airport Road, Morgantown, WVDOH, West Virginia. Project Manager designing for In-House Engineering Division to widen a section of WV 705 from three lanes to five lanes. This project has many challenges, such as extensive storm drainage, close proximity of utilities, tight ROW, and existing roadway geometry.
- Service Wire IAR, Culloden, WVDOH, West Virginia. Project Manager designing for In-House Engineering Division to build an industrial access road for Service Wire, Inc. This project included a new roadway design, utility coordination, railroad coordination, and environmental coordination.
- Point Pleasant 6th Street Bridge, WVDOH, Point Pleasant, West Virginia. Project Manager and Roadway Designer designing for In-House Engineering Division to replace an existing steel bridge along WV 62. The existing bridge has many challenges, such as close proximity and relocation of utilities, tight ROW, and existing roadway geometry. The proposed replacement structure is a concrete box culvert.
- Horse Run Rib Arch Bridge, WVDOH, Weston, West Virginia. Project Manager and Roadway Designer designing for In-House Engineering Division to replace an existing concrete arch bridge over Freemans Creek. The existing bridge has many challenges, such as close proximity of utilities, tight ROW, and existing roadway geometry. The proposed replacement structure is a simple-span steel girder bridge.
- Big Sandy Truss Bridge, Big Sandy, WVDOH, West Virginia. Project Manager and Roadway Designer designing for In-House Engineering Division to replace an existing steel truss bridge over the Tug Fork River. The existing bridge has many challenges, such as federally endangered crawfish, close proximity of utilities, tight ROW, mountainous terrain, and existing roadway geometry. The proposed replacement structure is a single-span steel beam bridge.
- Gary Bridge, Gary, WVDOH, West Virginia. Project Manager and Roadway Designer designing for In-House Engineering Division to replace an existing concrete box beam bridge over the Tug Fork River. The existing bridge has many challenges, such as a quickly deteriorating bridge deck and beams, close proximity to a railroad crossing, close proximity of utilities, tight ROW, existing roadway geometry, and short time schedule. The proposed replacement structure is a simple-span steel girder bridge.
- White Oak Arch Bridge, White Oak, WVDOH, West Virginia. Project Manager and Roadway Designer designing for In-House Engineering Division to replace an existing concrete arch bridge over Hackers Creek. The existing bridge has many challenges, such as close proximity to dwellings, close proximity of utilities, tight ROW, and existing roadway geometry. The proposed replacement structure is a concrete box culvert.
- Birch River W-Beam Bridge, Birch River, WVDOH, West Virginia. Project Manager and Roadway Designer designing for In-House Engineering Division to replace an existing steel w-beam bridge co over the Birch River. The existing bridge has many challenges, such as close proximity of utilities, tight ROW, and existing roadway geometry. The proposed replacement structure is a simple-span steel girder bridge.
- Hammer Strait Bridge, Franklin, WVDOH, West Virginia. Project Manager and Roadway Designer designing for In-House Engineering Division to replace an existing bridge over Paddy Run and Trout Run. The existing bridge has many challenges, such as close proximity of utilities, tight ROW, the joining of multiple streams, and existing roadway geometry. The proposed replacement structure is a simple-span steel girder bridge.
- West Virginia Division of Highways, Charleston, West Virginia. Highway Engineer Trainee responsible for preparing construction and MOT, and ROW plans, designing roadway horizontal and vertical alignments using MicroStation and InRoads, creating permit applications, coordinating utility relocations, designing gas line and water line relocations, determining appropriate ROW takes. (July 2014–June 2018). Concurrently served as Project Manager on several roadway-bridge projects (July 2014–June 2018.)

Terry Queen

Lead Construction Technician

Education

Drafting and Design, 1992, West Virginia Institute of Technology

Math & Physical Education, 1986, West Virginia Northern Community College

Skills

Construction Monitoring

Civil Engineering

Subsurface Sampling and Testing

Certifications / Training

Troxler Nuclear Densometer Certified

ACI Certified

WVDOH Portland Cement Concrete Inspector

40-Hour HAZWOPER Health and Safety Training

10-Hour OSHA Construction Safety Trained

OSHA 30-Hour Hazard Recognition Training

Certified CQA Geosynthetic Materials and Compacted Clay Liner Inspector

Virginia Responsible Land Disturber Trained

WVDOH Compaction Inspector

Industry Experience

GAI Consultants, Inc., 1995-Present

Ultrasonic Specialists, Inc., 1994-1995

Dan Hill Construction Company, 1989-1992

D.E. Leonard & Associates, 1987-1988

WACO, 1986-1987

Professional Summary

Mr. Queen specializes in construction monitoring for impoundment, site closure, infrastructure, and municipal projects. He provides drafting for site planning, earthwork detailing, and pre-mining and pre-blast surveys. Mr. Queen develops preliminary and final designs for mine reclamation sites and mining permits, and site development, and prepares construction drawings for highway and bridge projects. He compiles engineering data from a variety of sources; processes data using well-defined methods and presents data in prescribed formats.

Select Professional Experience

- Abandoned Mine Lands (AML) Projects, Southern West Virginia, West Virginia Department of Environmental Protection (WVDEP), Office of Abandoned Mine Lands. Assisted with preparation of hydraulic/hydrology calculations, supporting documentation for engineering construction cost estimate, U.S. Army Corps of Engineers (USACE) 404 applications, and grading of regarding of exposed refuse spoil piles for three projects.
- Participated in the preliminary and final site planning design of AML sites for the WVDEP. Surveying, design drafting, site grading, haul roads, and drainage design.
- Laurel Point Stripe Geotechnical investigation for WVDEP, Office of Abandoned Mine Lands, Laurel Point, West Virginia. Duties include monitoring of drilling activities, daily bore logs, soil and coal refuse sampling and rock core sampling.
- Greystone Mine Drainage Project, WVDEP, Office of Abandoned Mine Lands, Morgantown, West Virginia. Geotechnical investigation for this AML Project. Duties include monitoring of drilling activities, daily bore logs, soil and coal refuse sampling and rock core sampling.
- Owings Mine Complex, Harrison County, West Virginia. Evaluated water quality and potential passive Acid Mine Drainage (AMD) treatment system design at the mine complex site. Project included identifying monitoring points (streams and AMD discharges), sampling monitoring points for three months and drafting conceptual design of passive AMD treatment system.
- Owings Mine Complex, Harrison County, West Virginia. Subsurface investigation, grading and drainage design for four refuse piles and various other refuse areas, design of seals for 18 mine portals.

- Latrobe (Gibson) Landslide II Project, WVDEP, Office of Abandoned Mine Lands, Latrobe, West Virginia. Engineering work required to initiate an abatement plan to stabilize the hillside and abate the hazards associated with the land movement for the landslide.
- Omega Mine Complex, WVDEP, Office of Abandoned Mine Lands, Monongalia County, West Virginia. Prepared construction documents for the project. The project involved the injection of coal combustion byproduct grouts into mine workings to help alleviate the generation of AMD. Work included preparation of drawings.
- Harris AMD Project, WVDEP, Office of Abandoned Mine Lands, Harrison County, West Virginia. Prepared construction documents for the Harris AMD site. Project included designing channels, wet seals, drain pipes, and preparing drawings.
- Monitored construction of 600,000 cubic yard rock buttress for a failed coal slurry impoundment. Work included monitoring of activities, troubleshooting, preparing daily logs and construction administration coordination for the WVDEP.
- Construction monitoring for closure of municipal solid waste landfills. Work included monitoring construction activities, preparing daily reports and trouble shooting in Fayette, Kanawha, Mingo, and Braxton Counties for the WVDEP, Office of Waste Management. Closure activities included waste regrading, leachate collection, and soil caps.
- Water supply inventories and water sample collection for the Phase II water feasibility study for the Weaver-Junior Study Area in Barbour and Randolph Counties, West Virginia for the WVDEP.
- Construction monitoring for reclamation of a failed coal slurry impoundment. Construction included earthwork, rock buttress, and drainage channels.
- Construction oversight for a landslide reclamation project of a valley fill in Fayette County, West Virginia. Construction included collecting drainage in rock drains, rock buttress, earthwork, and drainage channels.
- Well Pad Project, Marshall and Wetzel Counties, West Virginia. Lead construction monitor inspector. Work included monitoring slope stabilization for failed well pads, erosion and sediment control best management practices associated with development of well pads, and the Blake Fork stream restoration.
- Duhring Street Pony Truss Bridge Replacement Project, West Virginia Department of Transportation, Division of Highways (WVDOH), Town of Bramwell, Mercer County, West Virginia. Performed geotechnical investigation services for the project. Construction was completed in 2016.
- Willowwood Bridge Replacement Project, WVDOH, Summers County, West Virginia. Performed geotechnical investigation services for the project. Duties include monitoring of drilling activities and daily bore logs, soil sampling, and rock core sampling.
- Shotcrete Soil/Rock Nail South Wall and North Wall Complex Project, Power Plant Flue-gas Desulfurization (FGD) Landfill. Performed construction monitoring services for the project. Project included two soil nail shotcrete wall up to 70 feet in height, sedimentation pond, leachate holding basin, leachate and electrical pipeline and conduit to connect to the South Pond Complex, and installation of a 72-inch diameter clean water diversion culvert.
- Assisted with preparing National Pollutant Discharge Elimination System (NPDES) Stormwater construction permits and erosion and sediment control plans for three natural gas transmission pipeline projects in West Virginia and Pennsylvania.
- Prepared construction documents for a subsidence project in Fairmont, West Virginia. Project involved drafting of layout of injection plan for grouting under three residences; and preparing drawings.
- Geotechnical investigation for the WVDOT Summersville Regional DMV Office in Nicholas County, West Virginia. Duties include monitoring of drilling activities, daily bore logs, soil and coal refuse sampling and rock core sampling.

Michael Doyle

Senior Designer

Education

AS, Computer Aided Drafting and Design, 1996, Triangle Tech

Skills

Computer Aided Design and Drafting

Certifications / Training

Troxler Nuclear Gauge Certification and Annual Training Refresher

Inroads

Right of Way Plans, Courthouse to Statehouse

10-Hour OSHA Construction Safety and Health

PEC Safe Land Training

Industry Experience

GAI Consultants, Inc., 2004-Present

Qk4, 2001-2004

Kimley-Horn and Associates, 1996-2001

Professional Summary

Mr. Doyle specializes in transportation and civil engineering, ranging from industrial/commercial site development and planning projects to large scale roadway design projects. His work with private developers, architects, municipalities and government agencies has given him substantial experience in site and roadway design.

Mr. Doyle has worked on a variety of construction project sites including industrial and commercial facilities. Some of his civil engineering/site design projects included alignment layout, cross-sections, vertical profiles, site detailing, quantities, and design of both large and small sites ranging in size from one family residential to 37+-acre subdivisions. He prepares design and construction plans, reports, permits, and cost estimates for projects.

Mr. Doyle's computer skills include AutoCAD Civil 3D (Surfaces, Alignments, Profiles, Corridor Modeling, and Grading), MicroStation, Bluebeam PDF Revu, Maptech, and Terrain Navigator Pro.

Select Professional Experience

Environmental Engineering

- Heizer Creek Drainage and Wolfpen Landslide for West Virginia Department of Environmental Protection (WVDEP), Office of Abandoned Mine Lands, Putnam and Kanawha Counties, West Virginia
- Bud/Alpoca Water Study for WVDEP, Office of Abandoned Mine Lands, Wyoming County, West Virginia
- Herndon Heights Water Study for WVDEP, Office of Abandoned Mine Lands, Wyoming County, West Virginia
- Nuriva/Maben Water Study for WVDEP, Office of Abandoned Mine Lands, Wyoming County, West Virginia
- Landslide Remediation Design, Grant County, West Virginia and Charlottesville, Virginia
- Stormwater Pollution Prevention Plan (SWPPP) Inspections, Boone County, West Virginia
- Pond Removal & Stream Restoration Construction Monitoring, Wetzel County, West Virginia
- Walk-in Inspections for Reclamation of Former Utility Company Right-Of-Way, Kanawha County, West Virginia

Roadway Design

- WV 9, Berkeley County, West Virginia
- US 52, King Coal Highway, Mingo and Logan Counties, West Virginia
- WV 3 & 12 Willowwood Bridge, Summers County, West Virginia
- Martinsburg Bypass/Raleigh Street Connector Design Study, Berkeley County, West Virginia
- Pennsylvania Street, City of Carmel, Indiana
- WV 7, T.A. Shuman Bridge, Wetzel County, West Virginia
- I-68 Overpass, Preston County, West Virginia
- Church Street Widening, City of Norfolk, Virginia
- Hampton Boulevard Underpass, City of Hampton, Virginia
- Oak Grove Connector, Virginia Department of Transportation, Virginia Beach, Virginia
- Laskin Road Widening, Virginia Department of Transportation, Virginia Beach, Virginia
- Traffic Signal Timing Plans, City of Virginia Beach, Virginia

Land Development / Site Planning

- West Virginia Capitol Complex Perimeter Security, Charleston, West Virginia
- Charlotte's Creek Horse Farm, Putnam County, West Virginia
- 42nd Street Parking Improvements, Kanawha City, West Virginia
- West Liberty University Retaining Wall and Site Improvements, West Liberty, West Virginia
- Edgewood Elementary School, Charleston, West Virginia
- Kanawha Boulevard Bike Trail, Charleston, West Virginia
- Kanawha Boulevard Streetscape, Charleston, West Virginia
- Energy Client’s Regional Headquarters, Charleston, West Virginia, LEED® Project
- Energy Client’s Field Office, Jane Lew, West Virginia
- Energy Client’s Field Office, Mount Morris, Pennsylvania
- Energy Client’s Field Office, Inez, Kentucky
- Energy Client’s Field Office, Mansfield, Pennsylvania
- Huttonsville Correctional Center Work Camp, Huttonsville, West Virginia
- Morgan County Courthouse, Morgan County, West Virginia
- Public Debt Mail Facility, Wood County, West Virginia
- Coopers Ridge Subdivision, Wood County, West Virginia
- Cheat Landing Residential Development, Monongalia County, West Virginia
- Cheat Landing Commercial Development, Monongalia County, West Virginia
- Cobblestone Subdivision, Putnam County, West Virginia
- Wal-Mart Supercenter, Tabb, Virginia
- Wal-Mart Supercenter, Williamsburg, Virginia
- Volvo Business Park, City of Chesapeake, Virginia

Jeremy Slodowick

Senior Lead Designer

Education

AST, Computer Drafting and Design

Skills

Computer Aided Design and Drafting (CADD)

Construction Administration

Project Planning and Coordination

Quality Assurance

Staff Training and Development

Certifications / Training

ACI Certification of Concrete Field Testing Technician—Grade I

Troxler Nuclear Gauge Safety Certification

Industry Experience

GAI Consultants, Inc., 2010-Present

WK Dickson & Company, Inc. 2008-2010

Edward Pinckney Associates, LTD, 2005-2008

Marshall, Tyler, Rausch, LLC, 2003-2005

Professional Summary

Mr. Slodowick specializes in grading design and developing construction documents, as-built drawings, master plans, surveys and permit applications, including creating and refining conceptual and construction details. He has in-depth knowledge of AutoCAD Civil3D, as well as AutoTURN, Bluebeam PDF Revu, Adobe Photoshop, MicroStation, and Acrobat. Mr. Slodowick uses CAD software to create surveys, design site layout and grading, and create construction plans, sections, and details. He also develops cost estimates, specifications, construction phasing and schedules, interprets municipality and regulatory codes. Mr. Slodowick has also performed construction administration services including project scheduling and quality control for earthwork construction and erosion and sedimentation control.

Select Professional Experience

- Assists Civil Engineers to develop site grading and drainage, roadway design, erosion control, site phasing, and construction details.
- Assists Structural Engineers to create construction plans, details, schedules, and as-built drawings.
- Assists Mechanical Engineers to develop as-built drawings for piping and electrical projects.
- Coordinates with Surveyors, Field Technicians, and GIS Specialists to develop surveys and as-built drawings.
- Performed construction monitoring on multiple gas compressor station grading projects and a Federal Aviation Administration paving project.
- Coordinates work schedules between multiple projects, offices, and staff to manage deadlines and budgets.
- Reviews project deliverables for accuracy, code compliance, and adherence to company or client standards.
- Mentors and trains new staff members.
- Project experience includes power plant landfills, disposal piping, waste facility ponds and dams, natural gas pipeline routing and well pads, haul and access roadways, wind farm layout, nuclear power plant auxiliary facilities, crane structures, pipeline and electrical routing, municipal waterlines, retail development, and residential development

APPENDIX C

SIGNED SOLICITATION NO. CEOI 0313 DEP2200000004

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

State of West Virginia
Centralized Expression of Interest
Architect/Engr

Proc Folder: 918801 **Doc Description:** EOI - 2021 Design Group C Projects **Proc Type:** Central Purchase Order			**Reason for Modification:**
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2021-08-18	2021-09-16 13:30	CEOI 0313 DEP2200000004	1

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code: 000000160372

Vendor Name : GAI Consultants, Inc.

Address : Charleston Office

Street : 500 Lee Street East, Suite 700

City : Charleston

State : West Virginia **Country :** United States **Zip :** 25301

Principal Contact : Charles Straley, PE, PLS, MS

Vendor Contact Phone: 304.541.0854 **Extension:**

FOR INFORMATION CONTACT THE BUYER

Joseph E Hager III
(304) 558-2306
joseph.e.hageriii@wv.gov

Vendor Signature X Charles F. Straley Digitally signed by Charles F. Straley DN: E=c.straley@gaiconsultants.com, CN=Charles F. Straley Date: 2021.09.09 13:47:00-04'00' **FEIN#** 25-1260999 **DATE** September 13, 2021

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

ADDITIONAL INFORMATION

The Acquisitions and Contract Administration Section of the Purchasing Division ("Purchasing Division") is soliciting Expression(s) of Interest ("EOI" or "Bids") for the West Virginia Department of Environmental Protection, Division of Land Restoration, Office of Abandoned Mine Lands and Reclamation (WVDEP-DLR-AML) ("Agency"), from qualified firms to provide architectural/engineering services ("Vendors") as defined herein.

The mission or purpose of the Group of Projects (as listed below 1 and 2) for which bids are being solicited is to provide the subsequent design services for each; including but not limited to (as may be applicable to each project):

1)Flatbush Highwall project
2)Fords Run Drainage project

.Perform Site and Geotechnical Investigations
.Design temporary and permanent access or accesses for construction and future maintenance, and active treatment site access.
.Design to repair drainageway through exposed and heavily scoured refuse to convey runoff.
.Design replacement drainage structure to convey Fords Run through the site.
.Design to repair or replace existing drainage structures.
.Design highway relocation, if required.
.Design to mitigate exposed refuse.
.Locate onsite borrow material to cover exposed refuse.
.Design to stabilize landslides, if required.
.Design of highwall reclamation.
.Design to mitigate AMD drainage, including possible horizontal borings.
.Design to mitigate AMD impacted ponded area and drainage.

INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 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 - Flatbush Highwall		

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description:
*Dates of Service are estimated for bidding purposes only.

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

Line	Comm Ln Desc	Qty	Unit Issue
2	EOI Engineering Design Services - Fords Run Drainage		

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description:
*Dates of Service are estimated for bidding purposes only.

SCHEDULE OF EVENTS

Line	Event	Event Date

EXPRESSION OF INTEREST

2021 Design Group C Projects

Disclaimer: Effective July 1, 2020, the Purchasing Division will accept electronic proposals for Expressions of Interest via the Vendor Self-Service portal within wvOASIS. Paper submissions after this date are still acceptable.

TABLE OF CONTENTS:

SECTION ONE: GENERAL INFORMATION

1. **PURPOSE:** The Acquisitions and Contract Administration Section of the Purchasing Division ("Purchasing Division") is soliciting Expression(s) of Interest ("EOI" or "Bids") for the West Virginia Department of Environmental Protection, Division of Land Restoration, Office of Abandoned Mine Lands and Reclamation (WVDEP-DLR-AML) ("Agency"), from qualified firms to provide architectural/engineering services ("Vendors") as defined herein.

2. **PROJECTS:** The mission or purpose of the Group of Projects (as listed below 1 and 2) for which bids are being solicited is to provide the subsequent design services for each; including but not limited to (as may be applicable to each project):

   1) Flatbush Highwall project
   2) Fords Run Drainage project

   - Perform Site and Geotechnical Investigations
   - Design temporary and permanent access or accesses for construction and future maintenance, and active treatment site access.
   - Design to repair drainageway through exposed and heavily scoured refuse to convey runoff.
   - Design replacement drainage structure to convey Fords Run through the site.
   - Design to repair or replace existing drainage structures.

- Design highway relocation, if required.
- Design to mitigate exposed refuse.
- Locate onsite borrow material to cover exposed refuse.
- Design to stabilize landslides, if required.
- Design of highwall reclamation.
- Design to mitigate AMD drainage, including possible horizontal borings.
- Design to mitigate AMD impacted ponded area and drainage.
- Design reclamation of exposed mine spoil and refuse.
- Design of drainage conveyances, including drainage channels, underdrains, and/or other controls to safely convey water off-site.
- Condition and revegetate all disturbed areas.

3. SCHEDULE OF EVENTS:

Release of the EOI.....	08/18/2021
Written Questions Submission Deadline.	09/09/2021
Addendum Issued	TBD
Expressions of Interest Opening Date	09/16/2021
Evaluation Committee List of Three Highest Qualified Firms Provided.....	TBD
Estimated Date for Interviews of Three Firms	TBD
Price Negotiations Commence with Highest Ranked Firm	TBD

EXPRESSION OF INTEREST

2021 Design Group C Projects

SECTION TWO: INSTRUCTIONS TO VENDORS SUBMITTING BIDS

Instructions begin on the next page.

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. REVIEW DOCUMENTS THOROUGHLY: The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

2. MANDATORY TERMS: The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

3. PREBID MEETING: The item identified below shall apply to this Solicitation.

☑ A pre-bid meeting will not be held prior to bid opening

☐ A **MANDATORY PRE-BID** meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting

are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. VENDOR QUESTION DEADLINE: Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: 09/09/2021 @ 4:00 PM ET

Submit Questions to: Josh Hager
2019 Washington Street, East
Charleston, WV 25305
Email: Joseph.E.HagerIII@wv.gov

5. VERBAL COMMUNICATION: Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

6. BID SUBMISSION: All bids must be submitted electronically through wvOASIS or signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include electronic submission via wvOASIS, hand delivery, delivery by courier, or facsimile.

The bid delivery address is:
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the Purchasing Division.:

SEALED BID: EOI 2021 Design Group C Projects
BUYER: Josh Hager
SOLICITATION NO.: CEOI 0313 DEP2200000004
BID OPENING DATE: See next page
BID OPENING TIME: See next page
FAX NUMBER: 304-558-3970

The Purchasing Division may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. Submission of a response to a Request for Proposal is not permitted in wvOASIS.

For Request For Proposal ("RFP") Responses Only: In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal prior to the bid opening date and time identified in Section 7 below, plus NA convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should clearly identify and segregate the cost proposal from the technical proposal in a separately sealed envelope.

7. BID OPENING: Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

Bid Opening Date and Time: 9/16/2021 @ 1:30 PM ET

Bid Opening Location: Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

8. ADDENDUM ACKNOWLEDGEMENT: Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

9. BID FORMATTING: Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

10. ALTERNATE MODEL OR BRAND: Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

☐ This Solicitation is based upon a standardized commodity established under W. Va. Code § 5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

11. EXCEPTIONS AND CLARIFICATIONS: The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

12. COMMUNICATION LIMITATIONS: In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

13. REGISTRATION: Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the $125 fee, if applicable.

14. UNIT PRICE: Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

15. PREFERENCE: Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at:
http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

15A. RECIPROCAL PREFERENCE: The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES: For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference

for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.

17. WAIVER OF MINOR IRREGULARITIES: The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

18. ELECTRONIC FILE ACCESS RESTRICTIONS: Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

19. NON-RESPONSIBLE: The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform or lacks the integrity and reliability to assure good-faith performance."

20. ACCEPTANCE/REJECTION: The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b."

21. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

22. INTERESTED PARTY DISCLOSURE: West Virginia Code § 6D-1-2 requires that the vendor submit to the Purchasing Division a disclosure of interested parties to the contract for all contracts with an actual or estimated value of at least $1 million. That disclosure must occur on the form prescribed and approved by the WV Ethics Commission prior to contract award.

A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

23. WITH THE BID REQUIREMENTS: In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

24. E-MAIL NOTIFICATION OF AWARD: The Purchasing Division will attempt to provide bidders with e-mail notification of contract award when a solicitation that the bidder participated in has been awarded. For notification purposes, bidders must provide the Purchasing Division with a valid email address in the bid response. Bidders may also monitor wvOASIS or the Purchasing Division's website to determine when a contract has been awarded.

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SECTION THREE: PROJECT SPECIFICATIONS

1. **Background:** Firms are to be licensed Architectural/Engineering Firms (A/E) in the State of West Virginia and should be familiar with and have successful track record of design of similar projects. The anticipated contract will be for "full service" A/E design. Aspects of the design are to include, but not be limited to; Civil, Geological and Hydrological.

   The successful A/E Firm will be responsible for Design of the following (as may be applicable for each of the Projects as listed in Section Two):

   - Access or accesses as required.
   - Geotechnical investigation and analyses.
   - Landslide Stabilization(s).
   - Hydrologic and hydraulic analyses.
   - Clear and grub affected areas.
   - Regrade as necessary.
   - Install drainage channels, underdrains, and/or other controls to safely convey water off-site.
   - Condition and revegetate all disturbed areas.
   - Obtain required permits as determined at the Pre-Design Meeting.

   Preliminary design documents will be due 90 days from the issuance of the Purchase Order, unless specified otherwise during the Pre-Design Meeting.

   Locations: The Projects are located in Randolph and Barbour Counties.

   Project 1: Flatbush Highwall is located off County Route 151 between Ellamore and Norton in Randolph County, WV, and is for the reclamation of the existing highwall and the previously constructed AMD ponded area.

   Project 2: Fords Run Drainage is located off County Route 24/2 east of Philippi in Barbour County, WV, and is for the repair and replacement of existing AML reclamation features and facilities and mitigation of failing structures and grading.

   The Sites are around multiple residences, or on gated private property; potential vendors are not to show up on occupied residences. A site visit will be performed with the Highest Scoring Vendor during the Negotiation Phase of this solicitation.

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2. **Projects and Goals:** The project goals and objectives include but are not limited to that as listed below. Vendors should discuss any anticipated concepts and proposed methods of approach for achieving each of the listed goals and objectives:

   2.1. Develop construction plans and technical specifications to stabilize the landslide, and design new drainage features and structures if the existing structures are unable to be repaired or replaced.

   2.2. Design plans and develop specifications to control any associated water with the site.

   2.3. Design plans and develop specifications for limits of disturbance, storm water control and erosion and sediment prevention. All disturbed areas are to be regraded and revegetated.

   2.4. Design plans and develop specifications for all conditions encountered on the project sites.

3. **Qualifications, Experience, and Past Performance:** Vendors should provide information regarding its employees, such as staff qualifications and experience in completing similar projects; references; copies of any staff certifications or degrees applicable to this project; proposed staffing plan; descriptions of past projects completed entailing the location of the project, project manager name and contact information, type of project, and the project goals and objectives and how they were met.

   The response should be presented in concise format which defines the corporation history and the experience, qualifications, and performance data of the firm's staff as requested by the AML Consultant Qualification Questionnaire (CQQ), Attachment "A" and the AML and Related Project Experience Matrix (RPEM), Attachment "B".

   AML Consultant Qualification Questionnaire (CQQ) should be completed and submitted with Vendor's submitted response to be eligible (**See Attachment "A"**).
   AML and Related Project Experience Matrix (RPEM) should also be completed and submitted with Vendor's submitted response to be eligible (**See Attachment "B"**).

4. **Oral Presentations/Interviews:** The Agency will conduct individual interviews with the three vendors that are determined to be the most qualified to provide the required service. During oral presentations/interviews, vendors may not alter or add to their submitted

proposal, but only clarify information already submitted. A description of the materials and information to be presented is provided below:

4.1. Materials and Information Required at Oral Presentation/Interviews:

An Oral Presentation will be conducted with the three firms selected as the most qualified by the WVDEP Selection Committee. The Committee will schedule the interviews. The format for the interviews will be a 30-minute PowerPoint presentation consisting, at a minimum, of the following:

- Corporate/personnel experience as it relates to the project or projects
- Proposed project management plan
- Key personnel available for the proposed work
- Proposed subcontractors (mapping, geotechnical, etc.)
- Product quality control
- Project cost control
- Project Schedule

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SECTION FOUR: VENDOR PROPOSAL, EVALUATION, & AWARD

1. **Economy of Preparation:** EOIs should be prepared simply and economically, providing a straight-forward, concise description of the firm's abilities to satisfy the requirements and goals and objectives of the EOI. Emphasis should be placed on completeness and clarity of content. The response sections should be labeled for ease of evaluation.

2. **BIDS MUST NOT CONTAIN PRICE INFORMATION:** The State shall select the best value solution according to W. Va. Code §5G-1-3. In accordance with Code requirements, no "price" or "fee" information is permitted in the Vendor's EOI response.

3. **Evaluation and Award Process:** Expressions of Interest for projects estimated to cost $250,000 or more will be evaluated and awarded in accordance with W.Va. Code §5G-1-3. That Code section requires the following related to evaluation and award:

   3.1. Selection Committee Evaluation and Negotiation: A committee comprised of three to five representatives of the agency initiating the request shall:

   3.1.1. evaluate the statements of qualifications and performance data and other material submitted by the interested firms and select three firms which in their opinion are the best qualified to perform the desired service.

   3.1.2. conduct interviews with each of the three firms selected.

   3.1.3. rank the three selected firms in order of preference.

   3.1.4. and commence scope of service and price negotiations with the highest qualified professional firm.

   If negotiations are successful, the contract documents will be forwarded to the WV Purchasing Division for review and approval, and then to the WV Attorney General's office for review and approval as to form. Once approved, a formal contract will be issued to the Vendor.

   Should the agency be unable to negotiate a satisfactory contract with the professional firm considered to be the most qualified at a fee determined to be fair and reasonable,

the agency will then commence negotiations with the second most qualified firm, and so on, until an agreement is reached, or the solicitation is cancelled.

3.2. **Three Firm Evaluation Rankings:** The Agency will evaluate the three firms that have been determined most qualified to perform the desired service. The evaluation criteria are defined in the Procurement Specifications section and based on a 100-point total score. Points shall be assigned based upon the Vendor's response to the evaluation criteria as follows:

• Qualifications, Experience, and Past Performance	(35) Points Possible
• Goals and Objectives: – Anticipated Concepts and Methods of Approach	(30) Points Possible
• Oral Interview	(35) Points Possible
Total	100

3.3 **Contractor Information Form (AVS):** Vendor must complete an AVS (Applicant Violator System) form to request an eligibility evaluation from the Office of Surface Mining Reclamation and Enforcement. This requirement applies to contractors and their sub-contractors and is found under OSMRE's regulations at 30 CFR 874.16. Vendor must sign and date it. Form must be completed within 30 days of award to be considered for award. The completion of the form will be requested by the Agency after evaluation and prior to award of the purchase order.

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SECTION FIVE: TERMS AND CONDITIONS

Terms and conditions begin on the next page.

GENERAL TERMS AND CONDITIONS:

1. CONTRACTUAL AGREEMENT: Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. DEFINITIONS: As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

2.1. "Agency" or **"Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

2.2. "Bid" or **"Proposal"** means the vendors submitted response to this solicitation.

2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.

2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.

2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

2.9. "Vendor" or **"Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

☐ **Term Contract**

Initial Contract Term: This Contract becomes effective on _____ and the initial contract term extends until _____.

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to _____ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

☐ **Alternate Renewal Term** – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

☑ **Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within 1,095 (one thousand ninety-five) days.

☐ **Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that maintenance, monitoring, or warranty services will be provided for _____ year(s) thereafter.

☐ **One Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

☐ **Other:** See attached _____

4. AUTHORITY TO PROCEED: Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced.

5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

☐ **Open End Contract:** Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

☐ **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

☑ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

☐ **One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

☐ **BID BOND (Construction Only):** Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.

☐ **PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of 100% of the contract. The performance bond must be received by the Purchasing Division prior to Contract award.

☐ **LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under $100,000. Personal or business checks are not acceptable. Notwithstanding the foregoing, West Virginia Code § 5-22-1 (d) mandates that a vendor provide a performance and labor/material payment bond for construction projects. Accordingly, substitutions for the performance and labor/material payment bonds for construction projects is not permitted.

☐ **MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

☐ **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

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The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below and must include the State as an additional insured on each policy prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

Vendor must maintain:

☑ **Commercial General Liability Insurance** in at least an amount of: $1,000,000.00 per occurrence.

☑ **Automobile Liability Insurance** in at least an amount of: $1,000,000.00 per occurrence.

☑ **Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: $1,000,000.00 per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

☐ **Commercial Crime and Third Party Fidelity Insurance** in an amount of: _____ per occurrence.

☐ **Cyber Liability Insurance** in an amount of: _____ per occurrence.

☐ **Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

☐ **Pollution Insurance** in an amount of: _____ per occurrence.

☐ **Aircraft Liability** in an amount of: _____ per occurrence.

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Notwithstanding anything contained in this section to the contrary, the Director of the Purchasing Division reserves the right to waive the requirement that the State be named as an additional insured on one or more of the Vendor's insurance policies if the Director finds that doing so is in the State's best interest.

9. WORKERS' COMPENSATION INSURANCE: Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10. [Reserved]

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

☐ _____ for _____.

☐ Liquidated Damages Contained in the Specifications.

☐ Liquidated Damages Are Not Included in this Contract.

12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

14. PAYMENT IN ARREARS: Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software maintenance, licenses, or subscriptions may be paid annually in advance.

15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

18. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.

19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

20. TIME: Time is of the essence regarding all matters of time and performance in this Contract.

21. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.

22. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

> **SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

24. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

29. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/default.html.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

34. VENDOR CERTIFICATIONS: By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. PURCHASING AFFIDAVIT: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State, Vendors are required to sign, notarize, and submit the Purchasing Affidavit to the Purchasing Division affirming under oath that it is not in default on any monetary obligation owed to the state or a political subdivision of the state.

38. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

39. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

☑ Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

☐ Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.division@wv.gov.

40. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.

b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process.

c. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

1. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars ($2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or

2. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars ($50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least $1 million, the vendor must submit to the Agency a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-award interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

44. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

45. VOID CONTRACT CLAUSES – This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

ADDITIONAL TERMS AND CONDITIONS
(Architectural and Engineering Contracts Only)

1. PLAN AND DRAWING DISTRIBUTION: All plans and drawings must be completed and available for distribution at least five business days prior to a scheduled pre-bid meeting for the construction or other work related to the plans and drawings.

2. PROJECT ADDENDA REQUIREMENTS: The Architect/Engineer and/or Agency shall be required to abide by the following schedule in issuing construction project addenda. The Architect/Engineer shall prepare any addendum materials for which it is responsible, and a list of all vendors that have obtained drawings and specifications for the project. The Architect/Engineer shall then send a copy of the addendum materials and the list of vendors to the State Agency for which the contract is issued to allow the Agency to make any necessary modifications. The addendum and list shall then be forwarded to the Purchasing Division buyer by the Agency. The Purchasing Division buyer shall send the addendum to all interested vendors and, if necessary, extend the bid opening date. Any addendum should be received by the Purchasing Division at least fourteen (14) days prior to the bid opening date.

3. PRE-BID MEETING RESPONSIBILITIES: The Architect/Engineer shall be available to attend any pre-bid meeting for the construction or other work resulting from the plans, drawings, or specifications prepared by the Architect/Engineer.

4. AIA DOCUMENTS: All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the attached AIA documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein. The terms and conditions of this document shall prevail over anything contained in the AIA Documents or the Supplementary Conditions.

5. GREEN BUILDINGS MINIMUM ENERGY STANDARDS: In accordance with West Virginia Code § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: Provided, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.

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.

Charles F. Straley Digitally signed by Charles F. Straley DN: E=c.straley@gaiconsultants.com, CN=Charles F. Straley Date: 2021.09.09 13:47:46-04'00'

(Name, Title)

Charles Straley, PE, PLS, MS - Senior Engineering Manager

(Printed Name and Title)

500 Lee Street East, Suite 700, Charleston, West Virginia 25301

(Address)

304.541.0854 / 304.926.8081

(Phone Number) / (Fax Number)

c.straley@gaiconsultants.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.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

GAI Consultants, Inc.

(Company)

Charles F. Straley Digitally signed by Charles F. Straley DN: E=c.straley@gaiconsultants.com, CN=Charles F. Straley Date: 2021.09.09 13:47:58-04'00'

(Authorized Signature) (Representative Name, Title)

Charles Straley, PE, PLS, MS - Senior Engineering Manager

(Printed Name and Title of Authorized Representative)

September 13, 2021

(Date)

304.541.0854 / 304.926.8081

(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CEOI 0303 DEP2200000004

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. 2
- ☐ Addendum No. 3
- ☐ Addendum No. 4
- ☐ Addendum No. 5
- ☐ Addendum No. 6
- ☐ Addendum No. 7
- ☐ Addendum No. 8
- ☐ Addendum No. 9
- ☐ 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.

GAI Consultants, Inc.

Company

Charles F. Straley Digitally signed by Charles F. Straley DN: E=c.straley@gaiconsultants.com, CN=Charles F. Straley Date: 2021.09.09 13:48:09-04'00'

Authorized Signature

September 13, 2021

Date

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

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: GAI Consultants, Inc.

Authorized Signature: Charles Straley Date: Aug 30, 2021

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 30th day of August, 2021.

My Commission expires August 31, 2021.

AFFIX SEAL HERE

NOTARY PUBLIC OFFICIAL SEAL
LENA TILLER
State of West Virginia
My Comm. Exp. August 31, 2021
GAI Consultants Inc
300 Summers St Ste 1100 Charleston, WV 25301

NOTARY PUBLIC Lena M. Tiller

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.

Revised June 8, 2018

West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

(Required by *W. Va. Code* § 6D-1-2)

Name of Contracting Business Entity: GAI Consultants, Inc. **Address:** 500 Lee Street East, Suite 700
Charleston, WV 25301

Name of Authorized Agent: _____ **Address:** _____

Contract Number: _____ **Contract Description:** _____

Governmental agency awarding contract: _____

☑ **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.
   EnviroProbe Integrated Solutions - Subsurface Drilling Services
   Geotechnics, Inc. - Construction Materials Testing Services

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.

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: Charles Stealey Date Signed: Aug 30, 2021

Notary Verification

State of West Virginia, County of Kanawha:

I, Charles Stealey, 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 30th day of August, 2021.

Lena M. Tiller
Notary Public's Signature

To be completed by State Agency:

Date Received by State Agency: _____
Date submitted to Ethics Commission: _____
Governmental agency submitting Disclosure: _____

NOTARY PUBLIC OFFICIAL SEAL
LENA TILLER
State of West Virginia
My Comm. Exp. August 31, 2021
GAI Consultants Inc
300 Summers St Ste 1100 Charleston, WV 25301

APPENDIX D

SIGNED AML CONSULTANT QUALIFICATIONS QUESTIONNAIRE

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
AML CONSULTANT QUALIFICATION QUESTIONNAIRE — Attachment "A"

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
2021 Design Group A Projects	9-14-2021	25-1260999

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
GAI Consultants, Inc.	385 E Waterfront Drive Homestead, PA 15120	General Analytics, Inc.

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)
412.476.2000	1958	Individual **X** Corporation Partnership Joint-Venture	YES **X** NO

7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE
500 Lee Street, Suite 700, Charleston, West Virginia 25301 / 304.926.8100 / Charles Straley, PE, PLS
Charleston, WV: 15; Bridgeport, WV: 10; Pittsburgh, PA: 15; Cranberry, PA: 5; Murrysville, PA: 8

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER – OTHER PRINCIPALS
Anthony Morrocco, President: 412.399.5197 Gary DeJidas, CEO: 321.319.3020	Stephen Gould, Executive VP/Asst Secretary: 412.399.5192 Karl Palvisak, Sr. VP / Treasurer / Secretary: 321.319.3021

9. PERSONNEL BY DISCIPLINE

102 ADMINISTRATIVE	6 ECOLOGISTS	13 LANDSCAPE ARCHITECTS	17 STRUCTURAL ENGINEERS
0 ARCHITECTS	1 ECONOMISTS	8 MECHANICAL ENGINEERS	10 SURVEYORS
11 BIOLOGIST	16 ELECTRICAL ENGINEERS	2 MINING ENGINEERS	18 TRAFFIC ENGINEERS
43 CADD OPERATORS	44 ENVIRONMENTALISTS	0 PHOTOGRAMMETRISTS	227 OTHER
0 CHEMICAL ENGINEERS	5 ESTIMATORS	14 PLANNERS: URBAN/REGIONAL	
129 CIVIL ENGINEERS	11 GEOLOGISTS	0 SANITARY ENGINEERS	
33 CONSTRUCTION INSPECTORS	3 HISTORIANS	10 SOILS ENGINEERS	
30 DESIGNERS	2 HYDROLOGISTS	5 SPEC WRITERS	716 TOTAL PERSONNEL
0 DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 3
***RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.**

Since 1984, GAI has completed more than 140 projects for the WVDEP-AML&R. GAI's proposed Project Advisor, Charles Straley, out of our Charleston Office, has worked on 96 of these projects, and has managed 71 of these projects.

10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? ☐ YES ☐ NO ☒ NA

11. OUTSIDE KEY CONSULTANTS/SUB-CONSULTANTS ANTICIPATED TO BE USED. Attach "AML Consultant Qualification Questionnaire".		
NAME AND ADDRESS: NONE	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No

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

YES Description and Number of Projects: GAI has completed 144 projects for the WVDEP-AML&R over the past 37 years. GAI has completed over 175 projects for all AML Programs (WV, PA, VA, MD, and Office of Surface Mining). These projects include remediation design of abandoned refuse piles, landslides, abandoned portals, demolition of facilities, design of drainage control structures, mine fires, subsidence issues, highwalls, acid mine drainage, and revegetation plans.

B. Is your firm experienced in Soil Analysis?

YES Description and Number of Projects: GAI has completed over 250 projects that required soil analysis for revegetation plans, acid base counts, foundation stability analysis, engineering properties, etc. Most of the 140+ WVDEP-AML&R projects required some type of soil analysis. GAI has completed analysis both in-house and with subconsultants, depending on requirements.

C. Is your firm experienced in hydrology and hydraulics?

YES Description and Number of Projects: GAI has completed over 300 projects which involve hydrology and hydraulics, including projects that were mining related. Most of the 140+ WVDEP-AML&R projects required hydrologic and hydraulic evaluations and design for drainage control structures, mine hydraulic level, mainstream event, water transmission, and sediment control. GAI is also experienced and trained in natural stream restoration and wetland mitigation

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

YES Description and Number of Projects: GAI has produced contour mapping on most of our 175+ projects completed for AML Programs. We subcontract our aerial photography, if it is not already available.

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: GAI has completed over 100 projects involving domestic waterline design, of which, 44 were for the WVDEP-AML&R program. This has included aquifer degradation evaluation and waterline design, Public Service District interaction, PSC requirements, and Health Department permits, to include field surveys, field inspection, and public hearings and meetings. Aquifer degradation and waterline design were the primary components of these projects.

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

YES Description and Number of Projects: GAI has completed approximately 130 Acid Mine Drainage (AMD) evaluations and abatement designs, of which 27 were for the WVDEP-AML&R program. Additionally, AMD was a consideration on most of the 140+ WVDEP-AML&R projects that GAI has worked on, which have included grouting programs, SAP installations, and innovative abatement design.

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:
Gandee, Jason, G. Project Manager	11	14	3

Brief Explanation of Responsibilities

Mr. Gandee is GAI's proposed Project Manager for WVDEP-AML&R Projects. He will manage these Projects from GAI's Charleston, West Virginia Office, and will be responsible for day-to-day project activities and guidance of the GAI Team. His main activities will include development of detailed step-by-step project work plans to ensure that project activities are completed on budget and on time; reviewing work product at intermediate points and at Project completion; providing guidance and direction to Project staff; as well as assisting with engineering and design work. Mr. Gandee has experience working on over 30 AML or related projects.

EDUCATION (Degree, Year, Specialization)
BS, 2007, Civil Engineering Technology, West Virginia University Institute of Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)

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:
Straley, Charles, F. Project Advisor	35	37	37

Brief Explanation of Responsibilities

Mr. Straley is GAI's proposed Project Advisor for WVDEP-AML&R Projects. He has either managed or provided engineering design services for over 95 AML projects for the WVDEP-AML&R. Mr. Straley will provide his expertise in the areas of geotechnical engineering, subsurface investigation, mining, soil and rock mechanics, subsidence exploration, foundation and embankment design, slope stability and landslide engineering, acid mine drainage, water feasibility studies, and material construction specifications.

EDUCATION (Degree, Year, Specialization)
MS, Geotechnical Engineering, 1988, University of Akron
BS, Civil Engineering, 1986, University of Akron

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Professional Engineer (PE), 1993, WV; 1995, OH; 1996, KY; 2007, IN Professional Land Surveyor (PLS), 1996, WV

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:
Splitstone, Donald, E. Lead Geotechnical Engineer	23	23	0

Brief Explanation of Responsibilities

Mr. Splitstone is GAI's proposed Lead Geotechnical Engineer for WVDEP-AML&R Projects and will provide his expertise in this area. He is an Engineering Manager in GAI's Geotechnical Engineering Group who specializes in design and construction of geotechnical projects for transportation, transit, railroad, government, and private clients. He has over 23 years of engineering experience developing geotechnical investigations, treatment schemes, details, plans, and specifications for various design projects. Mr. Splitstone has been involved in analysis, design, and report preparation for a multitude of projects including shallow and deep (driven and drilled) foundations, various types of retaining walls and support of excavation (SOE), embankment and cut-slope stability, and flexible and rigid structural pavement.

EDUCATION (Degree, Year, Specialization)
Graduate Studies, 1998-2002, Geotechnical Engineering, University of Pittsburgh
BS, Civil and Environmental Engineering, 1998, University of Pittsburgh
BS, Engineering Physics, 1996, Miami University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers (ASCE) Geo-Institute	Professional Engineer (PE), 2015, WV; 2004, PA; 2015, OH; 2020, FL

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:
Sciulli, A. Edward Lead Geologist	35	35	0

Brief Explanation of Responsibilities

Mr. Sciulli is GAI's proposed Lead Geologist for WVDEP-AML&R Projects and will provide his expertise in this area. He is a Senior Hydrogeology Manager with GAI who has over 35 years of experience specializing in managing small and large-scale remedial and site investigations, feasibility studies, and geophysical surveys. His diverse skill set includes experience in conducting watershed assessments related to former mining activities and abandoned mine land/watershed restoration planning. He is highly experienced conducting soil and groundwater evaluation, remediation, aquifer testing, contaminant fate and transport valuations, hazardous and solid waste regulation, and environmental health and safety. Mr. Sciulli also conducts Phase I & II Environmental Site Assessments and is instrumental in designing and implementing site investigations.

EDUCATION (Degree, Year, Specialization)
BS, Geosciences, 1986, Pennsylvania State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
National Groundwater Association Environmental and Engineering Geophysical Society	Professional Geologist (PG), 1994, PA; 2018, NY Project Management Professional (PMP), 2009

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:
Fisher, Shane, A. Lead Civil Engineer	1	16	3

Brief Explanation of Responsibilities

Mr. Fisher is GAI's proposed Lead Civil Engineer for WVDEP-AML&R Projects and will provide his expertise in this area. He will oversee the civil engineering aspects of this project and will be responsible for the preparation of construction drawings, technical specifications, calculations, and cost estimates. Mr. Fisher specializes in civil engineering, roadways, drainage systems, sanitary and industrial water and wastewater systems, and environmental permitting. He also manages erosion and sediment control, construction stormwater projects, and roadway permitting.

EDUCATION (Degree, Year, Specialization)
BS, Civil Engineering Technology, 2005, Fairmont State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers (ASCE), WV Northern Branch – President; American Society of Highway Engineers (ASHE)	Professional Engineer (PE), 2012, WV; 2017, VA; 2017, NC; 2018, MD

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:
Frech, Kerry, L. Lead Hydrologic and Hydraulic Engineer	18	42	3

Brief Explanation of Responsibilities

Mr. Frech is GAI's proposed Lead Hydrologic and Hydraulic Engineer for WVDEP-AML&R Projects and will provide his expertise in this area, including but not limited to stormwater management, water quality analyses, and modeling of drainage systems. He specializes in applying hydraulic principles to the development of water and land-related resources. Mr. Frech's experience ranges from planning and feasibility-level studies to design and the preparation of construction documents. Mr. Frech has also prepared numerous state and federal permit applications for public and governmental entities.

EDUCATION (Degree, Year, Specialization)
Meng, Environmental Engineering, 1978, Cornell University
BS, Civil Engineering, 1977, Cornell University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers (ASCE)	Professional Engineer (PE), 1998, WV; 1983, PA

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:
Hennessey, Christopher, M. Lead Structural Engineer	8	18	8

Brief Explanation of Responsibilities

Mr. Hennessey is GAI's proposed Lead Structural Engineer for WVDEP-AML&R Projects and will provide his expertise in this area. He will support GAI's Civil Engineering Group with design structures, if needed. He will also support GAI's Geotechnical Engineering Group for the design of retaining structures, as well as any other miscellaneous structural support. Mr. Hennessey specializes in structural investigations, structural rehabilitations, structural evaluations, and the design of structural building systems. His experience includes the modeling, design, and detailing of structural steel, reinforced concrete, post-tensioned concrete, tilt-up concrete panels, deep foundations, mat foundations, retaining walls, and forensic evaluations.

EDUCATION (Degree, Year, Specialization)
MS, Structural Engineering, Virginia Tech
BS, Civil Engineering, University of Tennessee

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Professional Engineer (PE), 2007, VA; 2013, PA; 2018, KY; 2018, TX Leadership in Energy and Environmental Design Accredited Professional (LEED® AP)

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:
Cook, Charles, A. Lead Environmental Specialist	0	15	0

Brief Explanation of Responsibilities

Mr. Cook is GAI's proposed Lead Environmental Specialist for WVDEP-AML&R Projects and will provide his expertise in this area. He will provide environmental services related to natural resources, including but not limited to wetland delineations, benthic studies, wetland restoration or mitigation, endangered species, revegetation, and stream restoration. Mr. Cook specializes in environmental and biological surveys and field assessments, including wetland delineations, jurisdictional stream determinations, vegetation surveys, benthic and water quality sampling, fish and herpetology studies, and threatened and endangered species surveys. He is familiar with current West Virginia and federal regulations, including Section 401 and 404 permitting process (Clean Water Act), and Section 7 consultation (Endangered Species Act).

EDUCATION (Degree, Year, Specialization)
BS, Biology, West Virginia State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Approved WVDNR Surveyor for Running Buffalo Clover Wetland Delineation Training - NC State University

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: 25	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
Holbert, Michael, L. Lead Roadway Engineer	0		

Brief Explanation of Responsibilities

Mr. Holbert is GAI's proposed Lead Roadway Engineer for WVDEP-AML&R Projects and will provide his expertise in this area. He serves as an Engineering Manager in GAI's Northeast Transportation group. His 25 years of transportation and roadway engineering experience include development of plans, specifications, and cost estimates; design study, preliminary engineering, and final engineering for numerous bridges and roadways. Mr. Holbert's experience includes working for the West Virginia Department of Transportation, Division of Highways (WVDOH); City of Morgantown; and Marshall University.

EDUCATION (Degree, Year, Specialization)
BS, Civil Engineering, 1996, West Virginia University (Summa Cum Laude)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Professional Engineer (PE), 2001, WV; 2005, PA; 2017, MD

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: 29	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 18
Queen, Terry, W. Lead Construction Technician	26		

Brief Explanation of Responsibilities

Mr. Queen is GAI's proposed Lead Construction Technician for WVDEP-AML&R Projects and will provide his expertise in this area. He will provide construction monitoring and construction administration services, and will be responsible for collecting field data, including but not limited to water samples, soil borrow samples, refuse samples, and verification of mapping. Mr. Queen specializes in construction monitoring, drafting for site planning, earthwork detailing, and pre-mining and pre-blast surveys. His experience includes developing preliminary and final design for mine reclamation sites, mining permits, and site development.

EDUCATION (Degree, Year, Specialization)
AD, 1992, Drafting and Design, West Virginia Institute of Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	WVDOH Portland Cement Concrete Inspector; WVDOH Compaction Inspector; ACI Certified; Certified CQA Geosynthetic Materials and Compacted Clay Liner Inspector

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: 23	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 16
Doyle, Michael, P. Lead Designer	11		

Brief Explanation of Responsibilities

Mr. Doyle is GAI's proposed Lead Designer for WVDEP-AML&R Projects and will provide his expertise in this area. He will be responsible for the development of project drawings, transferring survey data to project plans, and development of project details. Mr. Doyle specializes in civil engineering design ranging from industrial/utility sector site developments to various municipal planning projects including roadway layouts. His design experience includes alignment layout, cross-sections, vertical profiles, site detailing, erosion and sediment controls, stormwater drainage, and project quantities for both large and small sites. He prepares regulatory permit and/or construction plans, project reports, cost estimates and "As-Built" record drawings for projects.

EDUCATION (Degree, Year, Specialization)
AS, Computer Aided Drafting and Design, 1996, Triangle Tech

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE AML DESIGN SERVICES
Software: AutoCAD/Civil 3D, MicroStation, Microsoft Office Suite, Sewer CAD, Water CAD, Hydrocalc Hydraulics, TR-55, Hydraulic Modeling Software, Maptech (Professional), SLOPE/W and Slide2 (Slope Stability), GeoPack Design
Equipment: Plotters, Digital Cameras, Digital Planimeters, Surveying Stations, GPS Units, Computers, Photocopiers, Printers, Scanners

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
City of Wheeling Landfill Closure Cap Design Project; Landfill Site Characterization, Leachate Management and Closure Cap Design, and Construction Monitoring; Ohio County, West Virginia	WVDEP, Office of Environmental Remediation 2031 Pleasant Valley Road, Fairmont, West Virginia 26554	Surveying and Mapping; Site Reconnaissance; Records Review and Research; Subsurface Exploration and Testing; Characterization Report Preparation; Meetings; Design Development; Permitting; Construction Documents; Construction Monitoring; and QA/QC Testing	$934,080 (fee)	57%
Upper Gassaway Bridge Replacement Project; Phase 1 Design Study, Final Design, Contract Plans, and Related Documents; Braxton County, West Virginia	West Virginia Department of Transportation, Division of Highways, 1900 Kanawha Boulevard East, Building 5, Room 110, Charleston, West Virginia 25305-0430	Final Design and Contract Plans, Project Management and Coordination, Surveying, Final Hydraulics, Maintenance of Traffic, Roadway Design, Stormwater Management, Right-of-Way, and Geotechnical Engineering for the replacement of a bridge carrying West Virginia Route 4 over Elk River.	952,000 (fee)	93%
Eclipse Bottom Bridge Project; Study, Design, and Preparation of Contract Plans and related Documents; McDowell County, West Virginia	West Virginia Department of Transportation, Division of Highways, 1900 Kanawha Boulevard East, Building 5, Room 110, Charleston, West Virginia 25305-0430	Final Design and Contract Plans, Project Management and Coordination, Geotechnical Engineering, Surveying, Preliminary Field Review, Right-of-Way Plans, QA/QC, Drainage, Permitting, Natural Resources, Structural Design for the construction of a new two-lane bridge in the town of Bradshaw that will cross Dry Fork of Tug River and Provide access to WV 83.	$689,155 (fee)	30%

TOTAL NUMBER OF PROJECTS: 3

TOTAL ESTIMATED CONSTRUCTION COSTS: $2,575,235

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
None					

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)
Oldfield Branch (Hall)Drainage: AML Reclamation Project, included subsurface investigation, surveying, development of construction plans and specifications for reclamation, selected permit applications, and engineer's Opinion of Probable Construction Costs; Mingo County, West Virginia	WVDEP, Office of AML&R 601 57th Street, SE Charleston, WV 25304	$75,269.50 (fee)	2016	YES
Larry Frederick Highwall and Refuse Project: AML Reclamation Project consisting of two sites with collapsed portals and drainage, mine subsidence, un-vegetated coal refuse, residential waste, and a highwall bench. GAI provided subsurface investigation, surveying, development of construction plans and specifications for reclamation, permit applications and an Engineer's Opinion of Probable Construction Costs; Harrison County, West Virginia	WVDEP, Office of AML&R 601 57th Street, SE Charleston, WV 25304	$55,985 (fee)	2017	YES
City of Nitro Streambank Restoration: Rehabilitate and Stabilize 700 linear feet of existing riverbank along the Kanawha River to minimize future erosion; Kanawha County, West Virginia	WVDEP, Office of AML&R 601 57th Street, SE Charleston, WV 25304	$112,700 (fee)	2017	YES
White Avenue Landslide Remediation Project: Reviewed geologic and mining conditions along with available historic topographic maps and aerial photos; performed site reconnaissance; performed a geotechnical subsurface exploration; conducted laboratory testing of select soil and rock samples; developed alternatives to stabilize/remediate the landslide; and developed construction drawings of preferred alternative; Morgantown, Monongalia County, West Virginia	City of Morgantown 389 Spruce Street Morgantown, WV 26505	$67,000 (fee)	2021	YES

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
None					

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.
Please see GAI's Expression of Interest for additional information pursuant to GAI's qualifications for working on WVDEP-AML&R Projects.

20. The foregoing is a statement of facts.

Signature: Charles F. Straley Digitally signed by Charles F. Straley DN: E=c.straley@gaiconsultants.com, CN=Charles F. Straley Date: 2021.09.13 09:24:38-04'00' Title: Sr. Engineering Manager Date: September 14, 2021

Printed Name: Charles F. Straley, PE, PLS, MS

APPENDIX E

SIGNED AML CONTRACTOR INFORMATION (AVS) FORM

OMB # 1029-0119
Expiration Date: 10/31/2021

ABANDONED MINE LANDS (AML) CONTRACTOR INFORMATION FORM

You must complete this form for your AML contracting officer to request an eligibility evaluation from the Office of Surface Mining Reclamation and Enforcement (OSMRE) to determine if you are eligible to receive an AML contract. This requirement applies to contractors and their sub-contractors and can be found under OSMRE's regulations at 30 CFR 874.16. **NOTE:** This form must be signed and **dated within 30 days** of submission to be considered for a current bid.

Part A: General Information

Business Name:	GAI Consultants, Inc.
Tax ID #:	25-1260999
Address:	385 E. Waterfront Drive
City, State, & Zip:	Homestead, Pennsylvania 15120
Phone Number:	412.476.2000
Email Address:	412.476.2020

Part B: Obtain an Organizational Family Tree (OFT) from the Applicant Violator System (AVS)

If you plan to certify the existing AVS information or submit updates under Part C, you must include an OFT. To obtain an OFT, you may contact the AVS Office at 800-643-9748 or from the AVS website at: https://avss.osmre.gov/. Instructions for how to download an OFT from the AVS can be found at: https://www.osmre.gov/programs/AVS/aml-instructions.pdf.

OK - JJL

Part C: Certifying and updating information in the AVS

Select only one of the following options, follow the instructions for that option, and sign and date below.

I, Kent C. Cockley, have express authority to certify that:
(Print Name)

○ 1. Our business is in the AVS and is accurate, complete, and up-to-date. If you select this option, you must attach an Entity OFT from the AVS to this form. Do not complete Part D.

◉ 2. Our business is in the AVS but needs to be updated. If you select this option you must attach an Entity OFT from the AVS to this form. Use Part D to provide the missing or corrected information.

○ 3. Our business is not in the AVS and needs to be added. Complete Part D.

9/9/2021	Kent C. Cockley	Vice President
Date	Signature	Title

Digitally signed by Kent C. Cockley
DN: E=k.cockley@gaiconsultants.com, CN=Kent C. Cockley
Date: 2021.09.09 17:38:03-04'00'

Part D: OFT Information

Contractor's Business Name: GAI Consultants, Inc.

If the current Entity OFT information for your business is incomplete in the AVS, or if there is no information in the AVS for your business, you must provide all of the following information as it applies to your business. Please include additional copies of this page if the space below is not sufficient to capture all information.

- Every officer (President, Vice President, Secretary, Treasurer, etc.);
- All Directors, Partners, and Members;
- All persons performing a function similar to a Director;
- Every person or business that owns 10% or more of the voting stock in your business;
- Any other person(s) who has the ability to determine the manner in which the AML reclamation project is being conducted.
- **Please list an end date for any person no longer with your business.**

Name:	W. Thomas Chaney
Address:	Terminated
Begin Date:	5/1/2006
End Date:	3/15/2013
% Ownership:	
Position/Title:	Assistant Vice President
Phone Number:	

Name:	Thomas J. Cicero
Address:	Terminated
Begin Date:	12/31/2009
End Date:	7/20/2016
% Ownership:	
Position/Title:	Vice President
Phone Number:	

Name:	Richard A. Cima
Address:	Terminated
Begin Date:	6/16/1975
End Date:	1/02/2018
% Ownership:	
Position/Title:	Vice President
Phone Number:	

Name:	Jay Copenhaver
Address:	Terminated
Begin Date:	5/30/1995
End Date:	9/26/2014
% Ownership:	
Position/Title:	AVP/Chief Info Officer
Phone Number:	

PAPERWORK REDUCTION STATEMENT

The Paperwork Reduction Act of 1995 (44 U.S.C 3501) requires us to inform you that: Federal Agencies may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a current valid OMB control number. This information is necessary for all successful bidders prior to the distribution of AML funds, and is required to obtain a benefit.

Public reporting burden for this form is estimated to range from 15 minutes to one hour, with an average of 30 minutes per response, including time for reviewing instructions, gather and maintaining data, and completing and reviewing the form. You may direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Office of Surface Mining Reclamation and Enforcement, 1849 C Street, NW, Room 4559, Washington, DC 20240.

Part D: OFT Information

Contractor's Business Name: GAI Consultants, Inc.

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- All persons performing a function similar to a Director;
- Every person or business that owns 10% or more of the voting stock in your business;
- Any other person(s) who has the ability to determine the manner in which the AML reclamation project is being conducted.
- **Please list an end date for any person no longer with your business.**

Name:	John W. Edwards
Address:	Terminated
Begin Date:	12/31/2009
End Date:	12/31/2015
% Ownership:	
Position/Title:	Vice President
Phone Number:	

Name:	Linda J. Griffin
Address:	Terminated
Begin Date:	4/8/1996
End Date:	7/3/2014
% Ownership:	
Position/Title:	Assistant Vice President
Phone Number:	

Name:	Grace G. Harrison
Address:	Terminated
Begin Date:	4/22/1991
End Date:	3/03/2017
% Ownership:	
Position/Title:	Landscape Architect Manager
Phone Number:	

Name:	Gerald C. Hartman
Address:	Terminated
Begin Date:	1/2/2007
End Date:	1/31/2014
% Ownership:	
Position/Title:	Vice President
Phone Number:	

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- All Directors, Partners, and Members;
- All persons performing a function similar to a Director;
- Every person or business that owns 10% or more of the voting stock in your business;
- Any other person(s) who has the ability to determine the manner in which the AML reclamation project is being conducted.
- **Please list an end date for any person no longer with your business.**

Name:	Diane B. Landers
Address:	Terminated
Begin Date:	7/9/1987
End Date:	1/01/2016
% Ownership:	
Position/Title:	Vice President/CMO
Phone Number:	

Name:	David A. Mollish
Address:	Terminated
Begin Date:	1/3/2006
End Date:	11/06/2013
% Ownership:	
Position/Title:	Assistant Vice President/CHRO
Phone Number:	

Name:	F. Barry Newman
Address:	Terminated
Begin Date:	12/29/1970
End Date:	3/01/2013
% Ownership:	
Position/Title:	Vice President
Phone Number:	

Name:	C. Elwood Penn
Address:	Terminated
Begin Date:	8/1/2005
End Date:	5/25/2012
% Ownership:	
Position/Title:	Assistant Vice President
Phone Number:	

PAPERWORK REDUCTION STATEMENT

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- All persons performing a function similar to a Director;
- Every person or business that owns 10% or more of the voting stock in your business;
- Any other person(s) who has the ability to determine the manner in which the AML reclamation project is being conducted.
- **Please list an end date for any person no longer with your business.**

Name:	Jeffrey M. Sievers
Address:	Terminated
Begin Date:	5/14/1990
End Date:	5/13/2019
% Ownership:	
Position/Title:	Senior Engineering Manager
Phone Number:	

Name:	Precha Yodnane
Address:	Terminated
Begin Date:	1/30/1984
End Date:	6/01/2012
% Ownership:	
Position/Title:	Sr. Mgr VP/Regional
Phone Number:	

Name:	Anthony Morrocco
Address:	385 E. Waterfront Drive, Homestead, PA 15120
Begin Date:	12/6/1989
End Date:	N/A
% Ownership:	
Position/Title:	President
Phone Number:	412.399.5197

Name:	Gary M. DeJidas
Address:	618 E. South Street, Ste 700, Orlando, FL 32801
Begin Date:	6/16/1993
End Date:	N/A
% Ownership:	
Position/Title:	CEO & Chairman of the Board
Phone Number:	

PAPERWORK REDUCTION STATEMENT

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- All Directors, Partners, and Members;
- All persons performing a function similar to a Director;
- Every person or business that owns 10% or more of the voting stock in your business;
- Any other person(s) who has the ability to determine the manner in which the AML reclamation project is being conducted.
- **Please list an end date for any person no longer with your business.**

Name:	Stephen E. Gould
Address:	385 E. Waterfront Drive, Homestead, PA 15120
Begin Date:	1/6/1992
End Date:	N/A
% Ownership:	
Position/Title:	Exec. VP/COO
Phone Number:	412.476.2000

Name:	Kevin Leadbetter
Address:	12574 Flagler Center Blvd, Jacksonville, FL 32258
Begin Date:	2/1/2005
End Date:	N/A
% Ownership:	
Position/Title:	Senior Vice President
Phone Number:	904.559.8037

Name:	
Address:	
Begin Date:	
End Date:	
% Ownership:	
Position/Title:	
Phone Number:	

Name:	
Address:	
Begin Date:	
End Date:	
% Ownership:	
Position/Title:	
Phone Number:	

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Office of Surface Mining Reclamation and Enforcement
Applicant/Violator System

Search Criteria: Primary Show Er Entity Name: GAI Consul Mail To: Send

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1 of 2 Find | Next

AVS OFT Report - 8/30/2021 8:43:36 AM

All OFT's where the selected entity is listed as an entity or related entity

Entity Selected (140978) GAI Consultants Incorporated

Parent Entity	Relationship	Description	Related Entity	% Ownership	Begin Date	End Date
(140978) GAI Consultants Incorporated	Corporate Officer	AVP	(247448) W Thomas Chaney		12/2/2007	
(140978) GAI Consultants Incorporated	Vice President		(250148) Thomas J Cicero		12/31/2009	
(140978) GAI Consultants Incorporated	Vice President		(158893) Richard A Cima		12/28/2003	
(140978) GAI Consultants Incorporated	Corporate Officer	Assistant Vice President	(158898) Jay M Copenhaver		1/2/2005	
(140978) GAI Consultants Incorporated	Director		(152309) Gary M Dejidas		1/2/2001	
(140978) GAI Consultants Incorporated	President		(152309) Gary M Dejidas		7/1/2004	
(140978) GAI Consultants Incorporated	Corporate Officer		(250149) John W Edwards		12/31/2009	
(140978) GAI Consultants Incorporated	Corporate Officer	Assistant Vice President	(158899) Linda J Griffin		1/2/2005	
(140978) GAI Consultants Incorporated	Corporate Officer	Assistant Vice President	(158900) Grace G Harrison		1/2/2005	
(140978) GAI Consultants Incorporated	Vice President		(247450) Gerald C Hartman		1/1/2007	
(140978) GAI Consultants Incorporated	Vice President		(159534) Robert J Houston		10/20/2006	
(140978) GAI Consultants Incorporated	Secretary		(152303) Diane B Landers		4/24/2009	
(140978) GAI Consultants Incorporated	Vice President		(152303) Diane B Landers		12/13/2000	
(140978) GAI Consultants Incorporated	Corporate Officer	Assistant Vice President	(158901) David A Mollish		1/3/2006	
(140978) GAI Consultants Incorporated	Senior Vice President		(152306) Anthony F Morrocco		6/1/2008	

(140978) GAI Consultants Incorporated	Assistant Secretary		(152306) Anthony F Morrocco	1/1/2004	
(140978) GAI Consultants Incorporated	Vice President		(158896) Gregory T Nettuno	7/1/2002	
(140978) GAI Consultants Incorporated	Vice President		(159535) F Barry Newman	5/19/2006	
(140978) GAI Consultants Incorporated	Vice President		(156448) Karl S Palvisak	7/1/2004	
(140978) GAI Consultants Incorporated	Treasurer		(156448) Karl S Palvisak	7/1/2004	
(140978) GAI Consultants Incorporated	Corporate Officer	AVP	(247449) C Elwood Penn	12/1/2007	
(140978) GAI Consultants Incorporated	Corporate Officer		(249779) Benjamin Resnick	8/14/2009	
(140978) GAI Consultants Incorporated	Executive Vice President		(156449) J M Sievers	1/6/2008	
(140978) GAI Consultants Incorporated	Manager	Regional	(156449) J M Sievers	1/6/2008	
(140978) GAI Consultants Incorporated	Assistant Secretary		(156449) J M Sievers	1/30/2004	
(140978) GAI Consultants Incorporated	Vice President		(152301) Precha Yodnane	12/13/2000	
(140978) GAI Consultants Incorporated	Secretary		(140983) Raymond J Giarrusso		2/19/1998
(140978) GAI Consultants Incorporated	Shareholder		(140983) Raymond J Giarrusso		2/19/1998
(140978) GAI Consultants Incorporated	Assistant Secretary		(140984) John A Hribar	6/28/1993	1/1/1999
(140978) GAI Consultants Incorporated	Shareholder		(140984) John A Hribar		1/1/1999
(140978) GAI Consultants Incorporated	Vice President		(140984) John A Hribar	6/28/1993	1/1/1999
(140978) GAI Consultants Incorporated	Director		(140980) Thomas D Donovan		11/9/1999
(140978) GAI Consultants Incorporated	Shareholder		(140980) Thomas D Donovan		11/9/1999
(140978) GAI Consultants Incorporated	Shareholder		(140985) James E Niece		9/30/2002
(140978) GAI Consultants Incorporated	Chief Executive Officer		(140981) Anthony M Digioia Jr		6/30/2003
(140978) GAI Consultants Incorporated	President	Interim	(140981) Anthony M Digioia Jr	10/17/2002	6/30/2003
(140978) GAI Consultants Incorporated	Director		(151581) Mark J Pavlik	1/2/2000	7/6/2003
(140978) GAI Consultants Incorporated	Vice President		(152304) Herbert M Mandel	6/27/1993	7/7/2003
(140978) GAI Consultants Incorporated	Director		(146701) Dennis W Okorn	1/2/2000	8/30/2003
(140978) GAI Consultants Incorporated	President		(146701) Dennis W Okorn	1/1/2001	8/30/2003
(140978) GAI Consultants Incorporated	Director		(151580) Lawrence R Dodds	1/1/1998	11/3/2003
(140978) GAI Consultants Incorporated	Senior Vice President		(151580) Lawrence R Dodds	1/1/1998	11/3/2003
(140978) GAI Consultants Incorporated	Senior Vice President		(140982) Henry A Salver	6/30/1991	12/12/2003

500 Lee Street East, Suite 700
Charleston, West Virginia 25301
304.926.8100 | gaiconsultants.com