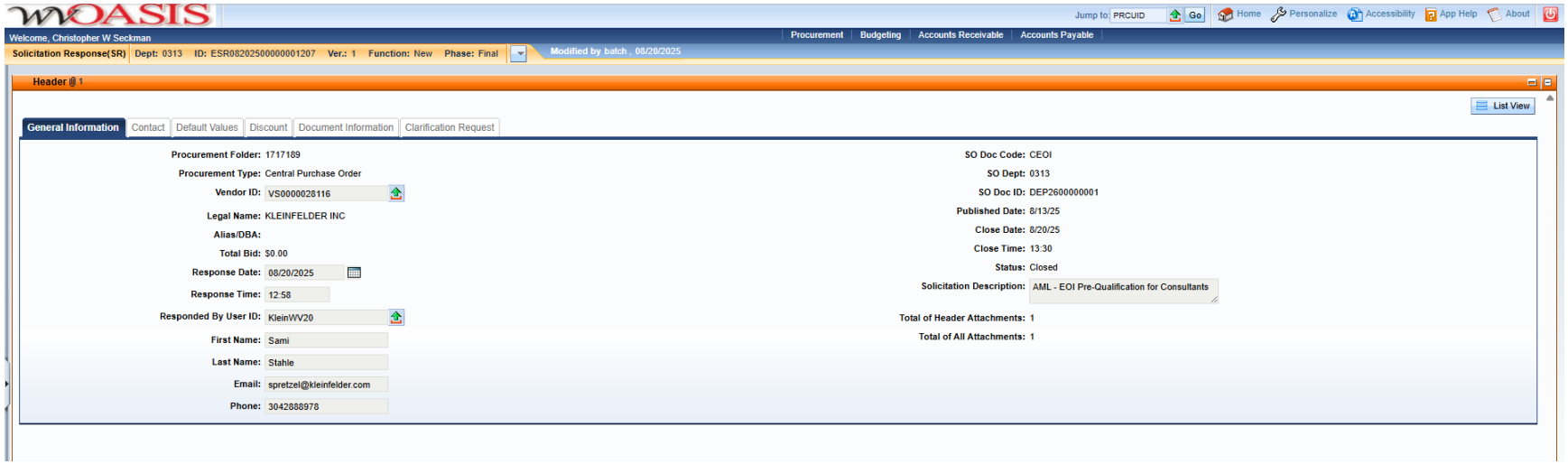
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency 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.


WVOASIS
Jump to PRCUID Go
Home
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About
Welcome, Christopher W Seckman
Procurement | Budgeting | Accounts Receivable | Accounts Payable
Solicitation Response(SR) Dept: 0313 ID: ESR08202500000001207 Ver.: 1 Function: New Phase: Final
Modified by batch , 08/20/2025
Header @ 1
List View
General Information
Contact
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Document Information
Clarification Request
Procurement Folder: 1717189
Procurement Type: Central Purchase Order
Vendor ID: VS0000028116
Legal Name: KLEINFELDER INC
Alias/DBA:
Total Bid: $0.00
Response Date: 08/20/2025
Response Time: 12:58
Responded By User ID: KleinWV20
First Name: Sami
Last Name: Stahle
Email: spretzel@kleinfelder.com
Phone: 3042888978
SO Doc Code: CEOI
SO Dept: 0313
SO Doc ID: DEP2600000001
Published Date: 8/13/25
Close Date: 8/20/25
Close Time: 13:30
Status: Closed
Solicitation Description: AML - EOI Pre-Qualification for Consultants
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:	1717189
Solicitation Description:	AML - EOI Pre-Qualification for Consultants
Proc Type:	Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2025-08-20 13:30	SR 0313 ESR08202500000001207	1

VENDOR

VS0000028116
KLEINFELDER INC

Solicitation Number: CEOI 0313 DEP2600000001

Total Bid: 0 **Response Date:** 2025-08-20 **Response Time:** 12:58:47

Comments: To be discussed at a later date. No discounts proposed.

FOR INFORMATION CONTACT THE BUYER
Joseph (Josh) 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				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

Commodity Line Comments: Kleinfelder is attaching a PDF with all attachments and additional information to support potential prequalification under this CEOI response.

Extended Description:

EOI Engineering Design Services

AML - EOI Pre-Qualification Package

CEOI 0313 DEP2600000001
August 20, 2025

KLEINFELDER
Bright People. Right Solutions.

180 White Oak Blvd, Suite 110
Bridgeport, WV 26330
Phone: 304 984-6443 | www.kleinfelder.com

August 20, 2025

Department of Administration
Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130
Joseph.E.HagerIII@wv.gov (Submitted Electronically)

SUBJECT: Project Proposal – Expression of Interest (EOI) Pre-Qualification Packet for the West Virginia Department of Environmental Protection, Division of Land Restoration, Office of Abandoned Mine Lands and Reclamation (WVDEP-DLR-AMLR).

Dear Mr. Hager,

Kleinfelder appreciates the opportunity to support the WV Department of Environmental Protection's (WVDEP) Division of Land Restoration's Office of Abandoned Mine Lands and Reclamation (DLR-AMLR) and its efforts to remediate abandoned mine land (AML) features (AMLF) in West Virginia (WV).

Kleinfelder understands that DLR-AMLR is seeking consultants to pre-qualify and provide proposals to provide architectural/engineering services to reclaim abandoned mine lands throughout West Virginia. The intent of this proposal is to retain Professional Design Services for engineering and related services to plan, design, and permit AML projects for the WVDEP's bidding and eventual construction.

Kleinfelder has a proven track record of success with similar projects throughout the Appalachian Coal region. Our team of AML professionals have years of experience restoring abandoned mine lands and waters impacted by pre-law (AML) mining. Pre-law mining features are ubiquitous throughout WV. For decades, these AMLF's have impaired creeks and streams rendering them aquatically "dead". Additionally, these AMLF's pose human health and safety hazards. Our team of experienced acid mine drainage scientists and environmental engineers are equipped with the necessary skills and tools to address these challenging projects and to make our communities safe and watersheds healthy in WV. Many of our team are former state and/or federal AML professionals that are well-seasoned in AML Reclamation, specifically Acid Mine Drainage (AMD) remediation.

A large portion of WV's creeks and rivers are impaired from past mining. It is imperative that proactive reclamation continues to be the priority in WV and to focus our efforts on restoring and improving impacted watersheds and abandoned mine lands. Kleinfelder understands the importance of these projects and are committed to providing our services for WV AML projects at the highest quality possible.

Please find attached our Statement of Qualifications package, that includes our resumes and project fact sheets highlighting other AML/AMD design projects being completed by Kleinfelder for the WVDEP and the PADEP, **Attachment A** – AML Consultant Qualification Questionnaire, **Attachment B** – AML Related Project Experience Matrix, and Office of Surface Mining Reclamation and Enforcement (OSMRE) AML Contractor Form (OMB#1029-0119)

If you have any questions or need additional information, please do not hesitate to reach out to Ladd Williams via email at lawilliams@kleinfelder.com or by phone at 304.841.2454.

Sincerely,

Samantha J. Stahle, PE
Abandoned Mine Program (AMP), Senior Program Manager
Kleinfelder

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

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
AML – EOI Pre-Qualification for Consultants	20, August, 2025	94-1532513

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
Kleinfelder, Inc.	770 First Avenue, Suite 400, San Diego, CA 92101	Century Engineering (Acquired)

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)
619-831-4600	1961	Individual Corporation Partnership Joint-Venture	YES NO (X)

7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE
180 White Oak Blvd, Suite 110, Bridgeport, WV 26330, 304-984-6443, Samantha J. Stahle (5)

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM		8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS
Louis Armstrong, CEO	Erik Soderquist, CFO	Troy Holloway, PA/MD/WV Area Manager 717-901-7055
John Murphy, COO	Rita Fordiani, Technical Director	Samnatha Stahle, Senior Program Manager 304-288-8978

9. PERSONNEL BY DISCIPLINE

462 ADMINISTRATIVE	39 ECOLOGISTS	5 LANDSCAPE ARCHITECTS	50 STRUCTURAL ENGINEERS
15 ARCHITECTS	0 ECONOMISTS	161 MECHANICAL ENGINEERS	**70 SURVEYORS**
75 BIOLOGIST	91 ELECTRICAL ENGINEERS	**5 MINING ENGINEERS**	38 TRAFFIC ENGINEERS
153 CADD OPERATORS	166 ENVIRONMENTALISTS	0 PHOTOGRAMMETRISTS	894 OTHER
17 CHEMICAL ENGINEERS	0 ESTIMATORS	20 PLANNERS: URBAN/REGIONAL	
280 CIVIL ENGINEERS	**112 GEOLOGISTS**	15 SANITARY ENGINEERS	
261 CONSTRUCTION INSPECTORS	0 HISTORIANS	137 SOILS ENGINEERS	
48 DESIGNERS	14 HYDROLOGISTS	10 SPECIFICATION WRITERS	3181 TOTAL PERSONNELL
43 DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 4
***RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.**

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

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

NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
AMD Industries, Inc. PO Box 501 California, PA 15419	Mine Water Treatment	X Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
AllStar Ecology 1582 Meadowdale Road Fairmont, WV 26554	Ecological studies outside of Kleinfelder's area of expertise.	X Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
NGE 650 MacCorkle Avenue West St. Albans, WV 25177	Geotechnical Engineering Services	X Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
WV Water Research Institute 1272 Evansdale Drive, PO Box 6064 Morgantown, WV 26506	AMD Remediation, Water Resources	_____Yes X No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
Terra Testing, Inc. 260 Meadowland Blvd Washington, PA 15301	Geotechnical Drilling	X Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
Charles "Chuck" Cravotta Cravotta Geochemical Testing 859 Bloody Spring Rd. Bethel, PA 19507	Mine water Treatment/Modeling	X Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
Six (6) Guns, LLC 10125 Mason-Dixon Highway Burton, WV 26562	Survey and Aerial Mapping	_____Yes X 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 **X** Description and Number of Projects:

Kleinfelder's personnel listed in section 13 of this attachment documents previous experience with front end watershed assessment, project development, abandoned mine lands remediation, Acid Mine Drainage (AMD) treatment facility design, and mine reclamation engineering for varying regions and types of mining. Additionally, attached for your consideration is additional information for the core team that supports Kleinfelder's Abandoned Mine Program (AMP). Specifically, Samantha Stahle is an RPE for mining engineering in the state and has West Virginia specific experience for mine site remediation, reclamation and general engineering related to surface and underground coal operations prior to and while working at Kleinfelder. Additionally, the core team for the Abandoned Mine Program (AMP) at Kleinfelder incorporates the combined knowledge of both AML agency experiences, with engineering design, construction management and operational experience for AML and AMD projects across the region. The total projects related to Kleinfelder's personnel experience with AML and AMD are approximately 13 projects for the firm, and many more from previous experience in the industry. Projects include but are not limited to reclamation to facilitate new operations, horizontal drilling program management to confirm abandoned mine works, geotechnical assessment of abandoned mine works for potential subsidence risk, abandoned mine grouting to mitigate subsidence risks, watershed management permitting & site design related to multiple bond forfeiture sites along the Dunkard Creek watershed in Pennsylvania, coal refuse site management and reclamation design, coal mine subsidence investigations and repair plan development, valley fill reclamation design, seep modeling and stability analysis, reclaimed channel design, flood modeling, and contaminant transport modeling.

Number of Projects: 13

NO

B. Is your firm experienced in Soil Analysis?

YES **X** Description and Number of Projects:

Kleinfelder has considerable depth regarding geotechnical engineering and soil analysis. Services and capabilities range from general site investigations, earth retention designs, slope stability evaluations, and geohazard evaluation. Kleinfelder currently manages multiple extensive landslide repair programs for large energy clients in the greater West Virginia, Ohio and Pennsylvania area. Total numbers of projects exceed 50 in the last 2-5 years. Scope and responsibilities vary from site investigations that include general geotechnical investigation and soils analysis to geotechnical design generation, construction specifications and plan set compilation. Construction oversight is recommended for any geotechnical design performed by Kleinfelder to ensure that the design is installed correctly, and that any field reports and documentation are complete and help mitigate risk to the client.

Number of Projects: >50

NO

C. Is your firm experienced in hydrology and hydraulics?

YES **X** Description and Number of Projects:

Kleinfelder has performed extensive stormwater design, floodplain modeling, surface water modeling, groundwater modeling, hydrogeology and structural geologic analysis conducted for surface and underground active and reclaimed mines. Programmatic coverage for some operations has been developed to reduce risk and support permitting needs depending on the Client and their needs. Approximately 25 projects in the last 2-5 years, varying in budget and schedule for national and regional operations in the Eastern United States.

Number of Projects: >25

NO

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

YES Description and Number of Projects:

NO **X** Kleinfelder sub-contracts aerial photography/LiDAR mapping to develop contour mapping for projects in the state of West Virginia. While Kleinfelder has in-house survey capabilities, aerial photogrammetry and LiDAR is supported by the sub-contractors listed in section 14.

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 **X** Description and Number of Projects:

Kleinfelder staff have worked on multiple domestic waterline design projects, including municipal, private and institutional systems. Projects involved hydraulic analysis, pump sizing calculations, pipeline design and construction oversight for both groundwater and surface water supplies. Staff have been actively involved in 50 projects or more across the eastern United States, a small portion (10 projects) of those were related to the southeastern United States and aquifer degradation because of mining. Currently the Pennsylvania Department of Environmental Protection’s Professional Engineering Services (PES) contract which provides free engineering services to rural/smaller water authorities in PA. A portion of this work is related to AML and AMD sites across the coal fields of PA. The contract is currently held by a Kleinfelder subsidiary (Century Engineering, acquired in 2021) and is supported by staff within the WV and PA offices.

Number of Projects: 50

NO

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

YES **X** Description and Number of Projects:

Currently, Kleinfelder is in design for the Morris Run Active Treatment Plant (ATP) Project for the Susquehanna River Basin Commission, the Banning No. 4 Mine Water Treatment Facility Upgrade for Clean Streams/Pennsylvania Department of Environmental Protection(PADEP), the Loyalsock Passive Treatment Re-design for the PADEP Bureau of Abandoned Mine Reclamation(BAMR), the Big Five (5) Shade Creek AMD Treatment plant development for the Shade Creek Watershed Association, the Quakake Tunnel AMD Treatment Facility for the PADEP-BAMR, the Hawk Run AMD Treatment Plant Development for the Moshannon Creek Watershed Association and the Bear Run South AMD Treatment Plant Development for the Indiana County, PA Conservation District. The Morris Run and Banning No. 4 projects are 10+ million gpd facilities that are incorporating functional redundancies and are focused on minimizing O&M costs for the life of the facility. While Morris Run is a brand-new facility to restore 22 miles of the Tioga River, the Banning Facility is a complete upgrade of the existing facility, taking the operations from two treatment plants to a single operational facility to hand a combined flow to overcome the inflows of the Banning No. 4 Mine. The Loyalsock passive treatment re-design will decrease aluminum concentrations and increase pH and alkalinity, which will improve the mainstem of the Loyalsock Creek. The Big five (5) Shade Creek AMD investigation and data compilation phase 1 project will provide Kleinfelder scientists with key information to develop a conceptual treatment facility design. This facility will restore 3.5 miles of Dark Shade Creek, 10 miles of Shade Creek and four miles of the Stonycreek River. The Quakake facility will restore 10 miles of impaired tributaries to the Lehigh River. Kleinfelder is also a current contract holder for the PA DEP BAMR's and Susquehanna River Basin Commission's on-call engineering services contracts which include both AML and AMD evaluation, design, and construction oversight. The core members of the AMP team have considerable experience as it relates to AMD evaluation and abatement design for both active and passive facilities and multiple types of applications.

Number of Projects: 7

G. Is your firm experienced in construction oversight?

YES **X** Description and Number of Projects:

Kleinfelder field engineers have overseen the construction on the following projects: Kleinfelder is currently conducting construction oversight for site restoration, subsidence mitigation and access roads for a confidential utility client at multiple locations across West Virginia and Pennsylvania. Additionally, pressure grouting is being conducted at three facilities to address karst and void stability for the same utility in Maryland and Pennsylvania, respectively. Kleinfelder is currently in design for the N1 Contract for WV DEP and will be completing construction oversight for the five sites included within that contract. Other examples of construction oversight that the firm has been responsible for included a 6.8-million-dollar project in Martinsville, WV consisting of water and sewer lines, road construction, box culvert installation and storm drainage; a 9-million-dollar bridge job over the Yadkin River in North Carolina; reclamation of two closed deep mines including the reclaim of entries, mine shafts, and reclamation of walls and establishing drainage; All construction oversight projects have included the requisition of equipment and materials, oversite of contractors and subcontractors, and assuring that jobs were done in accordance with specifications and approved plans.

Number of Projects: >20

NO

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
Stahle, Samantha J. Senior Program Manager Abandoned Mine Program	YEARS OF AML DESIGN EXPERIENCE: 10	YEARS OF AML RELATED DESIGN EXPERIENCE: 20	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 3

Brief Explanation of Responsibilities
Mining Engineer with 20 years of experience in mining and civil applications, experience varies from initial site assessment/development, environmental permitting for active and abandoned operations, construction management related to industrial and water treatment applications, abandoned mine site reclamation, and refuse disposal, transportation, as well as power/energy related to linear projects and facilities design. Ms. Stahle responsibilities include Abandoned Mine Program management, Project Management, Quality and Risk Management, Project Manager for mining related clients, and technical leader responsible for overseeing design and engineering for multiple regional clients. Additional information has been included in the appendices provided.

EDUCATION (Degree, Year, Specialization)
BS, 2006, Mining Engineering - Surface and Underground Coal Mine Operations & Reclamation
MBA, 2019 Business Administration & Export Management

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Society of Mining, Metallurgy and Exploration American Society of Civil Engineers National Stone, Sand and Gravel Association American Society of Reclamation Sciences	Professional Engineer, 2014, West Virginia Professional Engineer, 2019, Pennsylvania Professional Engineer, 2019, Ohio Other States Available Upon Request

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		
Clark, Thomas J Senior Scientist AMP Project Development Manager	YEARS OF AML DESIGN EXPERIENCE: 26	YEARS OF AML RELATED DESIGN EXPERIENCE: 26	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Brief Explanation of Responsibilities
Senior scientist responsible for water quality, stream biological, and water pollution control techniques, particularly in the passive technologies to treat impacted coal mine water. Mr. Clark also serves as Kleinfelder's Project Development Manager, serving as one of the prime contact professionals for clients, and as one of the main scientific report writers within the firm relating to AMD and AML work. Mr. Clark's experience prior to Kleinfelder included 15+ years as the Mine Drainage Coordinator for the Susquehanna River Basin Commission. Additional information has been included in the appendices provided.

EDUCATION (Degree, Year, Specialization)
BS, 1998, Biology – Terrestrial Ecology
MS, 2003, Biology – Aquatic Ecology and Water Pollution Control

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Reclamation Sciences	

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		
Williams, Laurence (Ladd) Scientist Project Manager II	YEARS OF AML DESIGN EXPERIENCE: 15	YEARS OF AML RELATED DESIGN EXPERIENCE: 15	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Brief Explanation of Responsibilities
Mr. Ladd Williams is a Scientist/Project Manager who specializes in the development of watershed-based plans for the treatment and monitoring of acid mine drainage (AMD). Additionally, he specializes in developing designs of active and passive AMD treatment systems and investigating and researching new technologies in mine water remediation. He was a former WVDEP employee in the Division of Land Restoration's Special Reclamation Program and is considered a technical expert in the Pre/Post law AMD field in West Virginia.

EDUCATION (Degree, Year, Specialization)
BS, 1989, Wildlife Resources, West Virginia University.
MS, 1996, Wildlife Biology, West Virginia University.

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		
Shultz, Bradley (Brad) Senior Civil Engineer	YEARS OF AML DESIGN EXPERIENCE: 21	YEARS OF AML RELATED DESIGN EXPERIENCE: 21	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 1

Brief Explanation of Responsibilities
Mr. Brad Shultz specializes in and is considered an expert in acid/abandoned mine drainage (AMD) characterization, treatment system design, and existing treatment system troubleshooting. Mr. Shultz has taught national training courses on passive mine drainage treatment, key member of the technical development team for the latest version of the AMDTreat software, worked on numerous AMD/AML reclamation design projects throughout the Appalachian Region. His currently role includes AML reclamation projects, AMD treatment system development and engineering design work, and development of new AMD treatment technologies.

EDUCATION (Degree, Year, Specialization)
B.S. Biology, 1993, Millersville University of PA; M.E.P.C. (Focus on Water Treatment/Chemistry), 2002, Pennsylvania State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State) Professional Engineer (P.E.), 2017, Pennsylvania

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
Pontzer, Aaron J. Energy & Abandoned Mines Senior Civil Engineer	YEARS OF AML DESIGN EXPERIENCE: 13	YEARS OF AML RELATED DESIGN EXPERIENCE: 15	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 7

Brief Explanation of Responsibilities
Abandoned Mine Drainage treatment system and Abandoned Mine Land reclamation design lead. Work on the design and permitting of treatment systems and reclamation of abandoned mine lands.

EDUCATION (Degree, Year, Specialization)
B.S. Environmental Systems Engineering, 1995, Pennsylvania State University; Masters of Engineering in Environmental Pollution Control, 1997, Pennsylvania State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Professional Engineer (PE070696), 2005-present, Commonwealth of Pennsylvania

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
Flanders, Nicholas, J Project Manager	YEARS OF AML DESIGN EXPERIENCE: 2	YEARS OF AML RELATED DESIGN EXPERIENCE: 2	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 6

Brief Explanation of Responsibilities
Mr. Flanders provides project management for AML, Energy, Water / Wastewater, and Municipal clients. Nick brings background data management and GIS application development for construction projects. Nick is currently managing a portion of the N1 contract and is involved with QA/QC of deliverables and managing sub-contractors across the entire N1 contract.

EDUCATION (Degree, Year, Specialization)
A.S. Information Science & A.S. Information Technology, 2001, Penn State University;
B.S. Environmental and Regional Planning & B.A. Geography, 2011, Indiana University of Pennsylvania

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Pennsylvania Society of Land Surveyors	Associate, 2012, 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		
Lilly, Clayton C.	YEARS OF AML DESIGN EXPERIENCE: N/A	YEARS OF AML RELATED DESIGN EXPERIENCE: 12	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:

Brief Explanation of Responsibilities
Mr. Lilly is an environmental permitting and planning project manager who specializes in Clean Water Act Section 404/401 permitting, wetland and stream mitigation, and threatened and endangered species survey consultation requirements.

EDUCATION (Degree, Year, Specialization)
B.A. English, 2004, West Virginia University; M.S. Forestry, 2017, West Virginia University.

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		
Sexton, Heather S. Senior Environmental Professional	YEARS OF AML DESIGN EXPERIENCE: N/A	YEARS OF AML RELATED DESIGN EXPERIENCE: 9	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:

Brief Explanation of Responsibilities

Ms. Heather Sexton is a project manager specializing in Clean Water Act Section 404/401 environmental planning and permit acquisition; aquatic resource mitigation planning and monitoring; and threatened and endangered species surveys, relocations and consultations.

EDUCATION (Degree, Year, Specialization)

B.S. Natural Resources, The Ohio State University (2005), Water Quality

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Society of Wetland Scientists	Professional Wetland Scientist (PWS), Current-2027, United States

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		
Means, Brent Geochemist AMD Industries, Inc.	YEARS OF AML DESIGN EXPERIENCE: 25	YEARS OF AML RELATED DESIGN EXPERIENCE: 25	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Brief Explanation of Responsibilities
Mr. Brent Means is considered an expert in geochemistry, mine drainage (AMD), treatment system design, and mine pool management. Mr. Means has in depth experience in clarifier operation and design and has developed numerous new treatment strategies for reducing costs and increasing performance. Mr. Means was the lead author on the Office of Surface Mining's AMDTreat software. His current role includes mine drainage treatment design, mine pool management, treatment operation, and project management. Mr. Means is currently working for Kleinfelder as a sub-consultant through AMD Industries, Inc.

EDUCATION (Degree, Year, Specialization)
B.S. Geology, 1996, University of Pittsburgh Johnstown; M.S. Hydrogeology, 1999, Wright State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Member of West Virginia Mine Drainage Taskforce	Professional Geologist (P.G.), 2010, Pennsylvania

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
Paul E. Fletcher. Snr Water Resources Engineer.	YEARS OF AML DESIGN EXPERIENCE: 2	YEARS OF AML RELATED DESIGN EXPERIENCE: 25	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Brief Explanation of Responsibilities
Dr. Paul Fletcher specializes in the design of process treatment equipment, including sizing, location and hydraulics for the treatment of acid mine drainage (AMD). Additionally, he specializes in developing conceptual designs of equipment layouts and coordinating with other disciplines to create a final design.

EDUCATION (Degree, Year, Specialization)
Chemical Engineering, 1989, B Eng.
Doctorate, 1995, Electrically Assisted Fiber Filtration.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Water Environment Federation. American Water Works Association Midwest Biosolids Association Ohio Rural Water Association UK Institution of Chemical Engineers	None.

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		
Skaggs, Daniel, F	YEARS OF AML DESIGN EXPERIENCE: 1.5	YEARS OF AML RELATED DESIGN EXPERIENCE: 15 Years	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:

Brief Explanation of Responsibilities

Engineer in charge of reclamation of deep mines, mine shafts, and surface mines. Engineer in charge of permitting and construction of sedimentation controls (ponds, ditches, etc.) Engineer in charge of mine seep collection system design and construction. Field engineer and construction oversite of heavy highway and bridge construction.

EDUCATION (Degree, Year, Specialization)
BS Civil Engineering, 1997, Geotechnical Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Professional Engineer, 2010, 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		
Zerby, Tibben, J. Project Manager II	YEARS OF AML DESIGN EXPERIENCE: 3	YEARS OF AML RELATED DESIGN EXPERIENCE: 8	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 10

Brief Explanation of Responsibilities
Mr. Zerby specializes in site civil design and permitting, including access design, grading, permitting (erosion and sedimentation, post construction stormwater management, highway, and other environmental permitting) and site plan development. He also has experience with sewer and waterline design and permitting.

EDUCATION (Degree, Year, Specialization)
B.S. Biological Engineering, 2014, The Pennsylvania State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Professional Engineer, 2020, Pennsylvania

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
Bruce W Davis Jr. (Wayne) Senior CADD Designer	YEARS OF AML DESIGN EXPERIENCE: 1	YEARS OF AML RELATED DESIGN EXPERIENCE: 36	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Brief Explanation of Responsibilities
Mr. Davis is an experienced CAD Designer with over 37 years of experience in the AML and mine permitting fields.

EDUCATION (Degree, Year, Specialization)

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		
Lynn, Joece, A	YEARS OF AML DESIGN EXPERIENCE: <1	YEARS OF AML RELATED DESIGN EXPERIENCE: 2	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: <1

Brief Explanation of Responsibilities
Field environmental technician for Kleinfelder’s Abandoned Mine Program. Experience in AMD/AML data collection, wetland delineations, GIS, drone surveys, and permitting. 40-hr HAZWOPER certified.

EDUCATION (Degree, Year, Specialization)
B.A. Environmental Studies and Geography, 2019, University of Pittsburgh; M.S. Geography and Environmental Planning, current, Indiana University of Pennsylvania

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		
Salas, Kaleb A. Staff Professional	YEARS OF AML DESIGN EXPERIENCE: 1	YEARS OF AML RELATED DESIGN EXPERIENCE: 2	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Brief Explanation of Responsibilities
Mr. Kaleb Salas specializes in the planning and execution of geotechnical data collection, including soil stratigraphy, hydrogeology, and slope stability.

EDUCATION (Degree, Year, Specialization)
Bachelor of Science in Geological Engineering, 2021, Minor in Mining Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
N/A	N/A

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		
Whorral, Michael V. Right of Way Agent II	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 4	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Brief Explanation of Responsibilities
Mr. Whorral has worked for the past 4 years acquiring and valuing required right of way and various forms of easements for roadway and related infrastructure projects in Pennsylvania. Core responsibilities include negotiation, agreement preparation, and valuation services.

EDUCATION (Degree, Year, Specialization)
B.S. Business Administration, 2018, West Virginia University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Notary Public, PA/WV (2026 & 2030) Appraisal License, PA, 2023-2025

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

Microsoft Office (Word, Excel, PowerPoint and Outlook)
Microsoft Teams

ArcGIS
AutoCAD Civil 3D
AutoCAD/Carlson Suite
MicroStation

HydroCAD
SED-CAD
HEC-RAS
ICPR

gINT
Plaxis
Ensoft Suite (APile, LPile, GROUP, SHAFT)
GEOStudio Suite (Slope/W, Seep/W, Sigma/W, Quake/W)
RocScience Suite (Slide, RSPile, RocData, Settle3D, Swedge)

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
Morris Run ATP AMD Treatment Plant Design and Conveyance Tioga County, PA	PA DEP, BAMR Ebensburg, PA	Full Design Services related to the abatement for 15 MGD treatment facility and associated conveyance.	$65,000,000	85%
Banning No. 4 Mine Treatment Plant Upgrade Westmoreland County, PA	PA DEP, DMO Harrisburg, PA	Full Design Services related to the abatement for 12 MGD treatment facility and associated conveyance.	$30,000,000	95%
Loyalsock AML Site Passive Treatment Site Upgrade Williamsport Area, PA	PA DEP, BAMR Wilkes Barre, PA	Full Design for a Passive Treatment System Upgrade.	$1,500,000	100%
Big Five Shade Creek Abandoned Mine Discharges Treatment Plant Development Somerset County, PA	Shade Creek Watershed Association	Phase 1 Project to complete field investigations and data compilations	$50,000,000	75%
Quakake Tunnel Abandoned Mine Discharge Treatment Facility Carbon County, PA	PA DEP, BAMR Wilkes Barre, PA	Full Design Services related to the abatement for 28 MGD treatment facility and associated conveyance.	$40,000,000	95%
Hawk Run Abandoned Mine Discharges Treatment Plant Development Clearfield County, PA	Moshannon Creek Watershed Association Philipsburg, PA	Phase 1 Project to complete field investigations and data compilations including a conceptual treatment plant and source conveyance layout	$50,000,000	10%
Bear Run South Multiple AMD Sources Passive Treatment Systems Engineering Design, Surveying, and Permitting Project Indiana CO, PA	Indiana County Conservation Districts Indiana, PA	Full engineering design, survey and permitting for two passive treatment systems and 10% Conceptual Design of a Third Passive Treatment System	$500,000	20%

Roundtop Southwest AML Reclamation Design Fayette CO, PA	PA DEP, BAMR Ebensburg, PA	Full Design for the reclamation of Dangerous Highwalls, Spoil Areas, and Mine openings.	$1,200,000	100%
Browns Run and Grassflat Run AML Reclamation Design Clearfield CO, PA	PA DEP, BAMR Ebensburg, PA	Full Design for the reclamation of Dangerous Highwalls, Spoil Areas, and Mine openings.	$2,600,000	85%
West Fork River Watershed AML Reclamation Design, The WV N1 Projects Harrison and Barbour CO, WV	WVDEP, AMLR Charleston, WV	Full Design for the reclamation of Five (5) projects across two counties to include dangerous highwalls, spoil areas, mine portals, subsidence areas, and dangerous slides.	$15,000,000-$20,000,000	40%
Fall Brook West AML Reclamation Design Tioga County, PA	PA DEP, BAMR Ebensburg, PA	Full Design for the reclamation of Dangerous Highwalls, Spoil Areas, and Mine openings.	$1,000,000	10%
Lost Creek Mine Pool Study, Schuylkill County, PA	PA DEP, BAMR Wilkes Barre, PA	Study of mine pool to determine if a artesian flow can be conveyed to another pool for treatment	$500,000	5%
Llewellyn South AML Design	Woodlands for Wildlife Mechanicsburg, PA	Full design and permitting for a large AML Problem Area adjacent to the Schuylkill River	$5,000,000	5%
Additional Projects can be provided upon request.				
TOTAL NUMBER OF PROJECTS: 13 have been provided		TOTAL ESTIMATED CONSTRUCTION COSTS: Over $260,000,000		

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 Provided, Kleinfelder is typically Prime for their projects.

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)
Flint Run Landslide Mitigation West Virginia	FirstEnergy Corp Greensburg, PA	$5,000,000	2023	YES
Dolly Landslide Mitigation West Virginia	FirstEnergy Corp Greensburg, PA	$5,000,000	2022	YES
Shelly Company – Quarry Highwall Evaluation and Mitigation Ohio	The Shelly Company Columbus, OH	$1,500,000	2021	YES
Phase 2 Subsidence Project Grafton, WV	FirstEnergy Corp Greensburg, PA	$1,500,0000	2025	YES
Glenville Weston Switch Glenville, WV	FirstEnergy Corp Greensburg, PA	$1,000,000	2024	YES
Maryland Mine Permit Certifications Garrett Co, MD	ARCH Resources Grafton, WV	$50,000	2022-2024	YES
Structure 147 and 151 Subsidence Emergency Work Grafton, WV	FirstEnergy Corp Greensburg, PA	$2,500,000	2024	YES
Additional Projects can be provided upon Request.				

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS CONSTRUCTION OVERSIGHT ON PROJECTS				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
Flint Run Landslide Mitigation West Virginia	FirstEnergy Corp Greensburg, PA	$5,000,000	2023	YES
Dolly Landslide Mitigation West Virginia	FirstEnergy Corp Greensburg, PA	$5,000,000	2022	YES
Phase 2 Subsidence Project Grafton, WV	FirstEnergy Corp Greensburg, PA	$1,500,0000	2025	YES
Glenville Weston Switch Glenville, WV	FirstEnergy Corp Greensburg, PA	$1,000,000	2024	YES
Structure 147 and 151 Subsidence Emergency Work Grafton, WV	FirstEnergy Corp Greensburg, PA	$2,500,000	2024	YES
Additional Projects can be provided upon Request.				

19. 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)

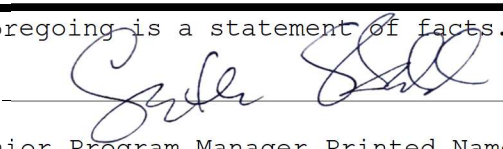
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
None Provided, Kleinfelder is typically Prime for their projects.					

20. 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.

Through our diverse history within the mining, environmental remediation and water sectors, Kleinfelder is bringing the depth and level of engagement of an international firm to the local level. We do this through both the firm and the individuals that have been included in our supporting documentation, as well as the pool of resources company wide that are available to support our proposed team. Kleinfelder is proposing to manage the West Virginia Abandoned Mine Lands Projects out of our local Bridgeport, WV office that is centralized to the current agency locations throughout the state, and the proposed projects listed under this submittal. Under the leadership of Samantha Stahle, PE (20 years of industry experience in the Northern WV coal fields), Thomas Clark (25+ years of AMD and AML project experience), Laurence "Ladd" Williams (WV Specific AMD and AML Watershed Experience) Kleinfelder has positioned itself to not only meet the needs of the agency but bring a level of quality and fit for purpose solutions to the projects that is supports.

Kleinfelder's over 3100 professional resources spanning a broad range of technical disciplines. We are highly integrated as a workforce, and though we are an international firm, our mantra is "One Company". We bring our most qualified specialists to bear when addressing our clients' needs, regardless of their location. While the geographic diversity of our resources allows us to quickly mobilize to meet project requirements, our One Company culture and use of Web-based collaboration tools allow us to seamlessly incorporate expertise from multiple locations, providing our clients with the most appropriately qualified resources for their specific project needs.

21. The foregoing is a statement of facts.

Signature: 

Date: August 20, 2025

Title: Senior Program Manager Printed Name: Samantha J. Stahle, PE

AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp. P=Personnel *	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS																PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional					
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Nitigation/ Replacement	Construction Inspection/Managem ent	Water Treatment	Active/Passive Water Treatment Systems	Eq;uipment/Structure Removal	Stream Restoration	Geotechnical/Stability						
Morris Run Active AMD Treatment Plant	C	Fact Sheet	M/P	M/P	M/P						M/P	M/P	M/P	M/P	M/P		M/P	M/P						
Banning Active AMD Treatment Plant	C	Fact Sheet				M/P			M/P			M/P		M/P	M/P	M/P								
Big Five Shade Creek Abandoned Mine Discharges Treatment Plant Development	C	Fact Sheet		M/P	M/P	M/P					M/P	M/P												
Quakake Tunnel Abandoned Mine Discharge Treatment Facility	C	Fact Sheet				M/P				M/P	M/P	M/P	M/P	M/P	M/P	M/P	M/P	M/P						
Loyalsock Creek Passive Treatment Plan Redesign	C	Fact Sheet				M/P					M/P	M/P		M/P	M/P	M/P								
Hawk Run Abandoned Discharges Treatment Plant Development	C	Fact Sheet		M/P		M/P						M/P		M/P	M/P									
Bear Run South Multiple AMD Sources Passive Treatment Systems	C	Fact Sheet	M/P			M/P					M/P	M/P		M/P	M/P									
Roundtop Southwest Abandoned Mine Reclamation	C	Fact Sheet	M/P		M/P	M/P					M/P	M/P												
Browns Run and Grassflat Run Abandoned Mine Land Reclamation Design	C	Fact Sheet	M/P		M/P	M/P					M/P	M/P												
West Fork River Watershed Abandoned Mine Reclamation Design	C	Fact Sheet	M/P	M/P	M/P				M/P	M/P	M/P	M/P	M/P			M/P		M/P						
Fall Brook West Abandoned Mine Reclamation Design	C	Fact Sheet	M/P			M/P					M/P							M/P						
Lost Creek Mine Pool Study Mahanoy Creek	C	Just Awarded				M/P			M/P		M/P	M/P						M/P						
Llewellyn South AML Reclamation Design	C	Just Awarded	M/P		M/P	M/P					M/P		M/P			M/P	M/P	M/P						

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

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

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

Attachment "B"

OMB # 1029-0119
Expiration Date:
01/31/2028

ABANDONEDMINELANDS (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 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:	Kleinfelder, Inc. ("Kleinfelder")	
Tax ID #:	94-1532513	
Address:	770 FIRST AVE., STE. 400	180 WHITE OAKS BLVD, SUITE 110
City, State, & Zip:	SAN DIEGO, CA 92101	BRIDGEPORT, WV 26330
Phone Number:	619-831-4600	304-933-3345
Email Address:	SPRETZEL@KLEINFELDER.COM	

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. Instructions for downloading an OFT from the AVS can be found at: https://www.osmre.gov/sites/default/files/2022-02/OMB%201029-0119%20instructions.pdf. If you require assistance you may contact the AVS Office by phone at: 800-643-9748, or by email at: avshelp@osmre.gov.

Part C: Certifying and updating information in the AVS

Select one of the options, follow the instructions for the selected option, sign, and date below.

I, Samantha J. Stahle, have express authority to certify that:
(Print Name)

☒ 1. Our business is listed in the AVS. The information 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. The information needs to be updated. (If you select this option, you must attach an Entity OFT from the AVS to this form). Complete Part D to provide the missing or corrected information.

☐ 3. Our business is not listed in the AVS. The information needs to be added. Complete Part D to provide the information.

August 20, 2025		Senior Program Manager
Date	Signature	Title

AVS OFT Report - 8/18/2025 6:57:32 PM

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

Entity Selected (266925) Kleinfelder Inc

Parent Entity	Relationship	Description	Related Entity	% Ownership	Begin Date	End Date
(266925) Kleinfelder Inc	Chief Executive Officer		(266926) Louis Armstrong		9/30/2019	
(266925) Kleinfelder Inc	President		(266926) Louis Armstrong		4/12/2019	
(266925) Kleinfelder Inc	Director		(266926) Louis Armstrong		9/30/2019	
(266925) Kleinfelder Inc	Assistant Secretary		(266930) Dan Brockman		2/22/2022	
(266925) Kleinfelder Inc	Secretary		(266928) Scott Hillman		2/22/2022	
(266925) Kleinfelder Inc	Director		(266928) Scott Hillman		2/22/2022	
(266925) Kleinfelder Inc	General Counsel		(266928) Scott Hillman		2/22/2022	
(266931) The Kleinfelder Group Inc	Shareholder		(266925) Kleinfelder Inc	100%		
(266925) Kleinfelder Inc	Director		(266929) John Murphy		11/9/2016	
(266925) Kleinfelder Inc	Chief Financial Officer		(266927) Erik Soderquist		11/16/2022	

ABANDONED MINE PROGRAM

SERVICES, EXPERIENCE, AND KEY PERSONNEL

KLEINFELDER
Bright People. Right Solutions.

May 2025

OUR MISSION

To assist our clients in all disciplines of watershed impact assessments, abandoned mine land reclamation design, passive abandoned mine drainage (AMD) treatment system design, active AMD treatment plant designs, and the necessary land survey, permitting, and construction management those restoration projects require, including support for all post-reclamation land-use projects such as commercial redevelopment, solar energy installations, reforestation, or farms and fields.

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WHY KLEINFELDER

Our Stake in Your Success Goes Beyond the Project

Multidisciplinary Experience

Kleinfelder is a leading engineering, construction management, design, and environmental professional services firm. Kleinfelder operates from over 100 office locations in the United States, Canada, and Australia. Established in 1961, we draw from a solid foundation of experience and thorough understanding of environmental, regulatory, economic, and civic conditions, to identify and address challenges with innovation and common sense. Using our multidisciplinary services, we collaborate with clients throughout the entire project lifecycle. Our understanding of each project phase allows us to develop innovative, cost-effective, and practical solutions that offer our clients increased flexibility, continuity, and coordination across all aspects of a project.

QUALITY
A Company Culture

Kleinfelder adheres to the highest standards of professional practice, maintaining a QA/QC Program identifying the procedures and controls to be used in project execution. This Program includes processes for data collection, data verification, data mapping accuracy (i.e. for GIS uses), copy editing, document readability, legality, technical review, and quality of service. The QA/QC Program assigns responsibilities and accountability to each level of analysis and review, encompassing the informal needs for professional research and analysis as well as the stringent requirements of formal QA/QC demanded by data collection and environmental analysis, record keeping, and auditing.

Abandoned Mine Program Services

Kleinfelder's scientists, engineers, designers, and construction managers work together as a multidisciplinary team solving legacy mining issues. Our services include:

- Investigating watersheds and determining what abandoned mine lands and abandoned mine discharges to focus on first
- Designing abandoned mine land reclamation projects that remove hazards to improve land and water
- Designing abandoned mine drainage passive treatment systems and large-scale active treatment plants for the restoration of receiving waters
- Surveying, permitting, and construction management of reclamation and treatment projects

Abandoned Mine Program Leadership

Sami Stahle, PE

Indiana, Kentucky, Maryland, Ohio, Pennsylvania, Virginia, West Virginia

Program Manager and Mining Engineer

Sami has 20 years of experience in mining and civil engineering, site assessment and design for energy related projects (mining and power), environmental permitting for infrastructure projects, feasibility studies, contract compliance and project management. Sami is a licensed Professional Engineer, having current registration for multiple states, including Pennsylvania, New York, and Maryland. Sami has experience with project scopes ranging from initial development to construction management, in the realms of industrial and water treatment applications, mine site reclamation and refuse disposal, and transportation, as well as power- and energy-related with linear projects and facilities.

Thomas Clark

Project Development Manager and Lead Scientist

Tom has 28 years of experience specializing in the development of abandoned mine land reclamation and mine drainage treatment projects. Prior to joining Kleinfelder in March 2023, he served as the Mine Drainage Program Coordinator for the Susquehanna River Basin Commission for 16 years. Tom is experienced in the assessment of and restoration planning for mine drainage impacted watersheds. Tom is also an accomplished grant proposal writer and is adept at finding the path of funding that your project needs to cross the restoration finish line. Tom is a biologist by trade and also has experience in aquatic ecological sampling procedures and macroinvertebrate and fish identification.

Design Team

- Jose Infante Corona, PE
- Brad Shultz, PE
- Aaron Pontzer, PE
- Tibben Zerby, PE
- Dan Skaggs, PE

Science Team

- Clayton Lilly, MS
- Eric Oliver
- Nick Flanders, CPESC, CESSWI
- Ladd Williams
- Ray Orloski

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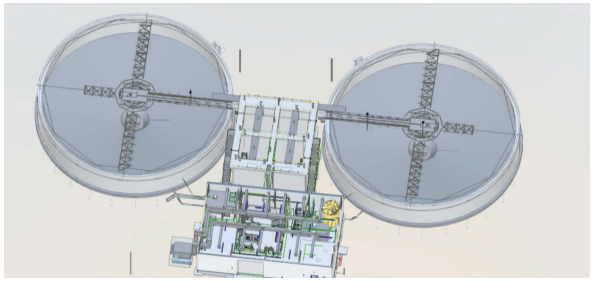
TECHNICAL CAPABILITIES

Abandoned Mine Program Services

Practice Areas

- AMD Treatment Process Evaluation and Design
- AML Reclamation Design
- Coal-to-Solar Energy Development
- Community Engagement and Public Relations
- Construction Administration and Inspection
- Ecological Assessment, Planning, and Permitting
- Field Data Collection
- Funding and Development Source Acquisition
- Independent Technical Peer Review
- Land Owner Engagement
- Mine Pool Control and Analysis
- Potable Water System Design
- Project Development and Feasibility Studies
- Retrofit/Rehabilitation Design
- Right-of-Way
- Risk Mitigation
- Slope/Slide Assessment and Stabilization Design
- Stream Channel Restoration and Sealing
- Subsidence Investigation and Mitigation Planning
- Survey Services
- Water Quality Improvements
- Watershed Assessment and Management



Banning Mine drainage treatment plan rendering

Kleinfelder team with community at public meeting

Abandoned mine land highwall investigation

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TECHNICAL CAPABILITIES

Water Testing Laboratory Capabilities

Drinking Water Laboratory

Kleinfelder's drinking water laboratory in McClure, Ohio, is OEPA certified to perform MMO-MUG Analysis for Total Coliform by Colilert. The laboratory is certified every three years and participates in an annual proficiency test to maintain certification. “Proficiency Testing (PT) samples are used to measure a laboratory’s proficiency in performing a particular drinking water approved method for specified parameters/analytes. In accordance with rules 3745-89-03, 3745-89-05 and 3745-89-06 of the *Ohio Administrative Code* (OAC), *Ohio EPA Laboratory Manual for Chemical Analyses of Public Drinking Water* (2020), *Ohio EPA Laboratory Manual for Microbiological Analyses of Public Drinking Water* (2020), and the United States Environmental Protection Agency's *Manual for Certification of Laboratories Analyzing Drinking Water* (5th ed.), each certified laboratory must participate and receive acceptable results for a PT study obtained from an approved PT provider.”

Kleinfelder's McClure, Ohio, Laboratory

Wastewater - Mine Drainage Laboratory

Bench-scale testing required to correctly select and size treatment components for large-scale mine drainage treatment plants can be completed by Kleinfelder at our McClure, Ohio, laboratory about 40 minutes Southwest of Toledo. Kleinfelder's Process Engineers utilize this large laboratory space and testing equipment to develop and hone strategies for treating and mitigating the stream impact consequences of mine drainage treatment projects.

Morris Run Treatment Plant Rendering

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OUR PROJECTS

Our core approach is to establish strong partnerships, serving as the foundation for effective collaboration, seamless communication, boundless creativity, and unwavering commitment to further the reclamation of abandoned mine lands, the treatment of abandoned mine drainage impacted waters, and the post-reclamation/treatment land-use wishes of our clients.

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Morris Run Active Treatment Plant Facility Design

The Morris Run Active Treatment Plant will collect abandoned mine drainage water and provide treatment using a high-density sludge process. Treated water will be returned to local tributaries of the Tioga River and mitigate existing water quality impairments.

PROJECT RESULTS

This project is currently still in the design phase. The goal of the project is to restore the ecological habitat and fish populations of the Tioga River and Tioga Lake. Among the services contributing to this goal, Kleinfelder provided wastewater treatment design, environmental permitting, geotechnical services, and public engagement.

Location:
Morris Run, Pennsylvania

Client:
Susquehanna River Basin Commission

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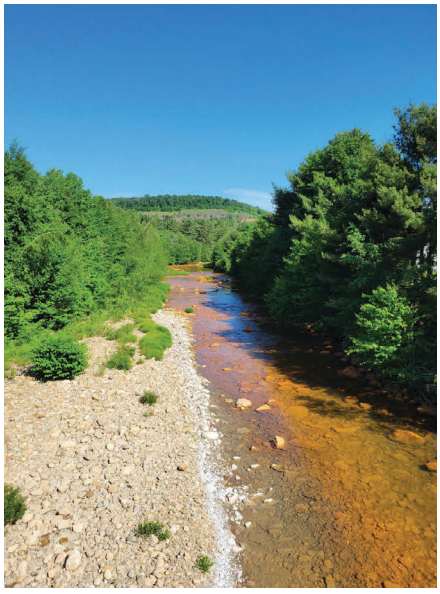
AN IMPACTED WATERSHED

The Tioga River Watershed is significantly impacted by five abandoned mine discharges. The discharges have rendered sections of the streams they discharge to and 22 miles of the Tioga River and several tributaries fishless, and impact the operations and water quality of the U.S. Army Corps of Engineers' Tioga Reservoir. Improved water quality at Tioga Lake could allow for low-flow augmentation management during drought periods for Tioga River users in Pennsylvania and Southern New York.

TREATMENT FACILITY SOLUTION

Kleinfelder is in the process of designing more than eight miles of gravity sewer and force mains and five separate pump stations to convey water to the active treatment plant site. At the treatment plant site, four mixing tanks and two 112-foot diameter clarifiers are planned to provide acid neutralization and metals precipitation. Sludge generated from the process will be pumped to injection wells one mile north of the treatment facility and treated water will be returned to local streams.



Once completed, the Morris Run Active Treatment Plant will include five discharges with a maximum flow of 15 million gallons per day, potentially making it one of the largest abandoned mine discharge plants in the world.

Banning Mine No. 4 Treatment Plant Upgrade and Reclamation Concept Design

The Banning and Euclid Active Treatment Plants located in Westmoreland County, Pennsylvania, were selected for replacement. The Banning Mine No. 4 water treatment plant was constructed in 1966 and for mine water control and to meet compliance discharge, and was re-activated in 1984 to abate mine pool surface discharge and elevation management.

PROJECT RESULTS

While still in the design phase of the project, it is expected that construction of the new treatment plant and other upgrades will begin as early as July 2024, with full commissioning as early as November 2025. With expanded capacity and attention to modern standards, the new facility will protect the waters of the Youghiogheny River and continue to function for many years.

Location:
Westmoreland County, Pennsylvania

Owner:
Clean Streams Foundation, Inc.

EXISTING CONDITIONS AND CHALLENGES

The Banning Mine water treatment plant serves an important purpose in collecting mine water from the underground pool for treatment to allow suspended solids and metals to be removed to meet effluent limits. To prevent a surface breakout, the mine pool must be maintained below a specified elevation, and the infrastructure must include redundancy of equipment to limit plant downtime.

RECOMMENDATIONS AND GOALS

Kleinfelder's team of professionals recommended replacing the existing infrastructure with a mine water pumping and treatment facility having a capacity of 6,500 gallons per minute. The conceptual design includes a new operations building and three vertical turbine pumps. This allows two of the mine dewatering pumps to operate during normal conditions while one pump remains on standby.

The flood plain of the Youghiogheny River constrained the new plant locations and required that additional fill was needed to raise the plant and pump operations pads to prevent flooding.

Goals of Kleinfelder's design included maintaining the level of the mine pool, preventing surface discharges from the underground mine pool, meeting or exceeding the required effluent limits, and ultimately preserving the water quality in the Youghiogheny River. Throughout the process, Kleinfelder will provide a variety of services, including engineering, operations, permitting, maintenance, and construction administration.

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Loyalsock Creek Passive Treatment Plant Redesign

The headwaters of Loyalsock Creek are a high-quality major sub-watershed to the West Branch Susquehanna River. The waters are impacted by two mine tunnel drainage discharges, which supply a significant level of acidity. Treatment systems designed and constructed in the 1990s resulted in some success in treating the discharge waters, but have been deteriorating in efficacy over time.

PROJECT RESULTS

The Loyalsock Creek Passive Treatment Plant is currently in the design phase, with plans to complete designs by early 2024 and begin construction by late 2024.

Treatment of large flows will decrease the aluminum concentration and, most notably, increase the pH and alkalinity concentrations in Loyalsock Creek, which will improve the mainstream fishery.

Location:
Sullivan County, Pennsylvania

Owner:
Pennsylvania Department of Environmental Protection

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PLANS FOR NEW TREATMENT INFRASTRUCTURE

To correct the deteriorating infrastructure, Kleinfelder was selected to design two new passive treatment systems for the mine water discharges. The new treatment facilities will treat higher rates of discharge and will offer easier operations and maintenance for the plant operator.

CHALLENGES AND GOALS

Adequate design of a new treatment solution provided three significant challenges:

- The need to design a passive water treatment system that can treat higher volumes of influent than systems built in the 1990s
- Loyalsock Creek is a cold-water fishery, resulting in the need to discharge treated effluent that will not thermally impact the cold water fishery
- The need to improve and/or create a passive treatment system that is easier to operate and maintain for the operator

Kleinfelder's proposed design includes an improved flow distribution box at the B-vein tunnel discharge. This improvement will capture and treat higher flows, allow for high flow bypass, and will create an easier method for handling possible sediment issues during high-flow events. This will provide treatment of flows up to 1,000 gallons per minute, with piping that will allow for an increase up to 2,000 gallons per minute.

At the C-vein discharge, Kleinfelder has proposed a new discharge catchment system to minimize sediment from entering the system. Conversion of the current pond to an upflow oxic limestone drain will allow for inflow up to 1,500 gallons per minute (an increase from 300 gallons per minute, currently).

Additional proposed features include a flush pond to be used as a storage mechanism for high-flow sediment. Treated waters will also be kept within limestone and pipes as much as possible to help mitigate thermal pollution.

Big Five Shade Creek Abandoned Mine Discharges Treatment Plant Development

The Shade Creek Watershed, the second largest tributary to the Stonycreek River in Somerset County, is heavily impacted by five large-flow mine discharges in close proximity. Being within a close radius allows for the combined treatment of those discharges in one centralized treatment plant. The plant will restore 3.5 miles of Dark Shade Creek, 10 miles of Shade Creek, and four miles of the Stonycreek River.

PROJECT RESULTS

The goal of this Phase I project is to complete investigations and data compilations that will inform the 10 percent conceptual design, as well as final design, construction, and permitting cost estimate of the centralized plant to treat the 'Big 5' discharges. This information and design will allow the Shade Creek Watershed Association to submit a grant application to gain funding for project completion.

Location:
Somerset County,
Pennsylvania

Owner:
Shade Creek
Watershed Assocation
shadecreekwatershed.org

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A TALE OF TWO WATERSHEDS

Shade Creek is formed at the confluence of the aptly named Clear Shade Creek and Dark Shade Creek. Clear Shade Creek drains much of the Gallitzin State Forest and contains stretches of Exceptional Value, High-Quality, Wild Trout, and Class A Fisheries. Dark Shade, on the other hand, was mined for coal significantly, still has operational mines, and suffers the consequences of that industry, particularly the mining that occurred before the 1977 Surface Mining Control and Reclamation Act. Upon their confluence, Shade Creek is a paddler's dream containing sections of Class IV/V rapids. The aquatic habitat through this section is also of a quality that will allow Shade Creek to be a cold-water fishing destination and economic driver for Somerset County.

THE 'BIG 5'

While most of Dark Shade Creek is mined by both underground and surface means, the most significant impacts originate as drainage from five legacy underground mine entries: Reitz #4, Loyalhanna #6, Reitz #2 Upper, Reitz #2 Lower, and Reitz #1. Of those five, Reitz #4 and Loyalhanna #6 are the most impactful to Shade Creek, contributing 96 percent of the iron loading, 86 percent of the acidity loading, and 34 percent of the aluminum loading. Reitz #2 Upper is a major aluminum contributor at 22 percent. Reitz #2 Lower and Reitz #1 are smaller contributors, but can be easily captured and conveyed for added stream buffering for smaller downstream discharges.

STONYCREEK RIVER REVIVAL

Water quality of the Stonycreek River has improved significantly over the last few decades. It has changed from a river running orange down to its confluence with the Little Conemaugh River in Johnstown, Pennsylvania, to a river prized by paddlers with more sections holding sport fishing opportunities every year – even in downtown Johnstown. Shade Creek's abandoned mine discharge loading is one of the final issues for a successful environmental revival, which will be a contributing factor to a regional economic renaissance.

Quakake Tunnel Abandoned Mine Discharge Treatment Facility

The Quakake Tunnel abandoned mine discharge (AMD) treatment facility will treat the large-flow discharge impacting Wetzel Creek, Quakake Creek, and Black Creek to its confluence with the Lehigh River in Carbon County, Pennsylvania. The treatment plant will include tunnel outfall collection, a hydrated lime mix tank, polymer addition, two conventional clarifiers, and aluminum sludge handling.

PROJECT RESULTS

The goal of the project is to design and construct a mine drainage treatment plant which will restore 10 miles of Wetzel, Quakake, and Black Creeks to a viable sport fishery to their confluence with the Lehigh River. Black Creek, popular with paddlers, enters the Lehigh River within the Lehigh Gorge State Park.

A TROUT STREAM IN WAITING

The Black Creek drainage, including Wetzel Creek and Quakake Creek, is significantly impacted by a large-flow abandoned mine tunnel-drainage discharge. That discharge, which can be in excess of 20,000 gallons per minute after precipitation events, has rendered 10 miles of those potential cold-water streams as fishless due to added acidity and aluminum loading. The AMD-polluted Black Creek then confluences with the Lehigh River within the Lehigh Gorge State Park which will also be improved through the project.

TREATMENT FACILITY SOLUTION

Kleinfelder is in the process of value engineering an 85-percent active treatment plant design project for the Quakake Tunnel discharge. A part of the value engineering is the evaluation and consideration of other techniques in terms of discharge outfall capture and polymer usage that may allow higher flows to be treated within the clarifier-plant leading to more effective high flow treatment and better water quality within the Black Creek drainage. In addition, Kleinfelder will explore alternatives for management and handling of the primarily aluminum hydroxide treatment solid by-product that will need to be disposed.

Kleinfelder is also evaluating methods to lessen costs and maintenance duties by reducing or eliminating stormwater impacts and detritus from entering the treatment plant.

Location:
Packer Township, Pennsylvania

Client:
Pennsylvania Bureau of Abandoned Mine Reclamation

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Hawk Run Active Treatment Plant Development

The Moshannon Creek Watershed, one of the largest and the most mine-drainage-impacted tributaries to the West Branch Susquehanna River, was historically regarded as impossible to remediate. That perception changed with the passing of the Infrastructure Investment and Jobs Act and the $250 million allocated to Pennsylvania annually for mine land reclamation and mine drainage treatment projects.

PROJECT RESULTS

This Phase I project is intended to complete investigations and needed data compilations, including design documents, permitting plans, and construction cost estimates, to treat the discharges impacting Hawk Run. These items will allow the Moshannon Creek Watershed Association to submit a future grant application for project completion.

NEW SOLUTIONS FOR 'IMPOSSIBLE' REMEDIATION

A 2020 watershed-wide assessment determined three prime areas of the Moshannon Creek Watershed were contributing 70% of the mine drainage loading. Hawk Run and its mine drainage discharges are one of those three locations, and offer the most iron loading to the Moshannon Creek mainstem. Due to the influx of Infrastructure Investment and Jobs Act funding, three large-scale active treatment plant projects are now in the early process of becoming a reality. The most upstream project is centered around discharges in the vicinity of Osceola Mills Borough; the second is located near the town of Hawk Run in Morris Township, Clearfield County, being advanced by Kleinfelder; and the most downstream plant being planned to treat discharges impacting the Sulfur Run tributary in Cooper Township, Clearfield County. The combined remediation impacts of these three planned plants have the potential of improving the Moshannon Creek mainstem water quality to an extent that allows fish species to re-populate.

MINE POOL COMBINATION POTENTIAL

While Hawk Run is impacted greatly from two shaft discharges from underground workings in the Lower Kittanning Coal Seam, another pool in the Ghem Mine which impacts Munson Run to the North, has the potential of being combined with the two pools that impact Hawk Run leading to a single plant treating three separate mine pools that could return water quality to two tributaries of Moshannon Creek. This project also will utilize thermal drone capabilities to help Kleinfelder and its client investigate and confirm that all mine discharge water impacting this area are accounted for and being collected. Mine water exits the underground at about 50 degrees Fahrenheit year round. This temperature is significant because it can be sensed by a thermal drone within surface waters, which have temperatures greater than 70 degrees during the summer months.

Location:
Morris Township, Pennsylvania

Client:
Moshannon Creek Watershed Association

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Bear Run South Abandoned Mine Drainage Passive Treatment Systems

From 2005 to 2015, nine restoration projects were completed within the Bear Run Watershed tributary of the West Branch Susquehanna River in Banks Township, Pennsylvania, returning much of the waters to a habitable status for wild trout. The final three projects, located in the South Branch, aim to remediate and restore the remaining areas impacted by abandoned mine drainage.

PROJECT RESULTS

Design and permitting of three passive treatment systems within the South Branch tributary will improve the habitat and safety of the surrounding recreational area. Using these plans, the Indiana County Conservation District will be able to submit future construction grant proposals, leading to the restoration of the South Branch tributary of Bear Run.

A TALE OF TWO TRIBUTARIES

Bear Run begins at the confluence of the North Branch and South Branch, which are two very different streams. The North Branch is the only Exceptional Value (EV) stream in Indiana County and contains a Class A population of native brook trout, mainly due to mine seams dipping away from the North Branch. The South Branch, on the other hand, is where many of those coal seams outcrop and were extensively deep mined and later surface mined. Prior the nine initial remediation projects, the South Branch was mainly fishless and had acidic pH values with elevated iron and aluminum concentrations. As a result of remediation, the entirety of the South Branch now contains fish, but not at population levels seen in the North Branch. It also still contains a section with slightly elevated iron concentrations. With the influx of Infrastructure Investment and Jobs Act funding for abandoned mine drainage (AMD) treatment and abandoned mine land (AML) reclamation, the final three prime untreated discharges can now be remediated.

RECLAMATION OF STATE GAME LANDS 174

Much of the Bear Run Watershed is found within Pennsylvania State Game Lands 174 at 3,956 acres in size. Restoration of the waters of Bear Run and the reclamation of AMLs located within the watershed and game lands not only improve the resources for the people utilizing these public lands, but also improve the safety for visitors. The remaining AML problem areas within the watershed and game land can be reclaimed to eliminate hazards, resulting in improved quality of the environment. The lands can also be reclaimed in a way where the post-reclamation sites serve as a food plot for area hunters. Since reclamation and treatment of most of the mining impacts from 2005 through 2015, Bear Run is increasing used by anglers, particularly on the North Branch and the section of Bear Run downstream of the North and South Branch's confluence. With these remaining projects, the South Branch has the potential to improve to a similar quality as that seen in the North Branch.

Location:
Banks Township,
Pennsylvania

Client:
Indiana County
Conservation District

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Roundtop Southwest Abandoned Mine Land Reclamation

The Roundtop Southwest Abandoned Mine Land (AML) Reclamation project includes landowner engagement, survey, design, permitting, and construction bidding and management services. The site includes five Priority II Dangerous Highwalls, one PIII Highwall, six PIII Spoil Areas, and PII Portal/Mine Opening reclamation on properties owned by seven private landowners.

PROJECT RESULTS

The goal of this project is the elimination of the inventoried AML hazards located on seven private properties. Results should include the improvement of water quality — particularly to Jacobs Creek due to the reclamation of a flooded strip pit and deep mine portals, which contribute abandoned mine drainage to an unnamed tributary. This project is currently in the survey and design phase.

Location:
Fayette County, Pennsylvania

Owner:
Confidential

PROPERTY-OWNER ENGAGEMENT

A significant part of this AML reclamation project is the necessary property-owner engagement of each of the seven private landowners. To coordinate and complete this task, Kleinfelder is utilizing its Right-of-Way Program professionals. This team provides a range of real estate services to public and private clients looking to obtain right-of-entry or property acquisition for a variety of projects.

HAZARD RECLAMATION AND WATER QUALITY IMPROVEMENTS

Areas part of the project site in Fayette County, Pennsylvania, include a diverse set of AML features contained within three different AML designated Problem Areas: Roundtop, Roundtop Southwest, and Fort Hill. These features straddle the watershed divide between the Youghiogheny River and Jacobs Creek.

The three Problems Areas contain Priority II Dangerous Highwalls and Portals and Mine Openings from a historical deep mine, and Priority III Highwalls and their associated PIII Spoil Areas. Multiple features contained within the Roundtop Problem Area (Dangerous Highwall, Portals, and Mine Openings) have water quality impacts on an unnamed tributary to Jacobs Creek, which should be improved upon reclamation of the features.

Kleinfelder is providing landowner engagement, survey, design, permitting, and construction management assistance services toward the successful reclamation of these AML features. This project is expected to be completed in the Fall of 2024.

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Browns Run and Grassflat Run Abandoned Mine Land Reclamation Design

The Browns Run and Grassflat Run abandoned mine land (AML) reclamations in Cooper Township, Pennsylvania, will restore mine lands and improve waters within the Moshannon Creek watershed, which is the largest tributary source of mining pollution to the entire West Branch Susquehanna River sub-basin.

PROJECT RESULTS

The goal of the Browns Run and Grassflat Run remediation project is the reclamation design of four Priority 2 dangerous highwalls totaling 13,600 linear feet, one Priority 3 highwall totaling 1,000 linear feet, 138-acres of Priority 3 spoil piles, and six Priority 3 mine openings, with several requiring bat gate installations. These reclamations will improve the water quality of both streams.

Location:
Cooper Township, Pennsylvania

Owner:
Pennsylvania Bureau of Abandoned Mine Reclamation

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A SCARRED WATERSHED

Moshannon Creek is the largest source of mine drainage loading to the West Branch Susquehanna River. Major efforts are starting to focus on three areas where strategically placed active mine drainage plants could be catalysts for widespread environmental remediation. However, those three plants, while leading to significant water quality improvements, will not completely restore Moshannon Creek and its tributaries. Projects like the Browns Run and Grassflat Run AML reclamation design that focus additional attention on AML reclamation that will improve tributary water quality, are also necessary to move the restoration needle.

IMPROVING BAT HABITATS THROUGH RECLAMATION

Bat populations, drawn to mine openings to roost and hibernate, have been in recent decline. However, these historical mine openings are also hazardous to humans and other animals that could fall in, becoming trapped or even killed. As part of the remediation plan, Kleinfelder will design bat gates that will eliminate these on-site AML hazards, while also improving bat access to those preferred habitats.

West Fork River Watershed Drainage Abandoned Mine Reclamation Design

The West Fork River Watershed is located in the north central coalfields of West Virginia. Historically, coal mining played a significant economic role in the early 1900s through the 1970s. Waters in the West Fork mainstem and many of its tributaries are listed on West Virginia's 303 (d) list of impaired waters due to mining pollution. Reclamation activities seek to address the associated land hazards and water quality.

PROJECT RESULTS

The goal of the N1 remediation projects is the reclamation design and construction management services for highwalls, existing facilities, open and collapsed mine portals, subsidence areas, coal mine spoil piles, dangerous slides, and AMD abatement. Cumulatively, these projects will contribute to a safer and cleaner environment for the public and improve the land and water quality of the West Fork River Watershed.

Location:
Harrison and Barbour Counties, West Virginia

Owner:
West Virginia Department of Environmental Protection, Abandoned Mine Land Program

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IMPACTED WATERS AND PLANNED PROJECT SITES

Waters on the 303 (d) list do not meet state water quality standards impacting aquatic life. The impairments are typically a result of abandoned mine drainage and sedimentation generated from abandoned mine lands. To remediate these issues, the Kleinfelder team will address the following areas:

- Enterprise Portals
- Miller Mine Drainage
- Sheppard Mine Drainage
- Simpson Creek Highwall, Tipple, and Portals
- West Fork #9

In addition, this reclamation project will help to protect the local communities through decreasing abandoned mine land hazards, such as open mine portals and facilities associated with past coal mining.

ABANDONED MINE LAND RECLAMATION

Kleinfelder's team of professionals was selected to supply planning, realty, design, and construction oversight services as part of reclamation efforts in the West Fork River Watershed. The project is funded through the Infrastructure Investment and Jobs Act. Each year over the life of the legislation, West Virginia is forecasted to receive $140 million for the reclamation of abandoned mine lands and the treatment of abandoned mine drainage.

West Fork mine portal

Simpson Creek highwall

Fall Brook West Abandoned Mine Land Reclamation

Additional projects surrounding the Morris Run Active Treatment Plant, located in the Tioga River Watershed, will combine abandoned mine land and public hazard reclamation with opportunities to decrease surface water infiltration into the underground mine, thus lessening influent flow to the plant. Reclamation of the Fall Brook West abandoned mine land will contribute to these watershed goals.

PROJECT RESULTS

Design and permitting of AML hazards reclamation at Fall Brook West will improve the habitat and safety of the surrounding recreational area and decrease the volume of water requiring treatment at the Morris Run Active Treatment Plant. With these plans in-hand, the PA BAMR will be set up for successful next steps, including the bidding and construction phases of the project.

Location:
Tioga County, Pennsylvania

Client:
Pennsylvania Bureau of Abandoned Mine Reclamation

RECLAMATION OF STATE FOREST LANDS

Much of the area surrounding Blossburg Borough in Tioga County, Pennsylvania, is Tioga State Forest. The Northern Bituminous Coalfield, the Northernmost thread of bituminous coal in Pennsylvania, also runs through sections of the forest. Consequently, there are listed abandoned mine land (AML) hazards on public property used extensively for hunting, hiking, and general recreation. Reclamation of these hazards on state-controlled lands will increase the safety of those using the land and allow for better access by community members and visitors alike. To achieve these goals, Kleinfelder's professionals will provide reclamation designs and guidance on necessary permits for the Pennsylvania Department of Environmental Protection's Bureau of Abandoned Mine Reclamation (PA BAMR). Kleinfelder will also work with Pennsylvania Bureau of Forestry personnel to revegetate the reclamation area to Bureau specifications, which are anticipated to include a mix of reforestation, grasslands, and areas seeded with pollinator mix.

REDUCING INFILTRATION INTO UNDERGROUND MINE POOLS

Five different discharges will be captured and conveyed for treatment at the future Morris Run Active Treatment Plant. Three of those, impacting the Morris Run tributary, drain the same mine pool located under the Fall Brook West AML Problem Area. Reclamation of the AML features within Fall Brook West will not only eliminate hazards on Tioga State Forest land, but is also estimated to eliminate between 20 to 30 million gallons of precipitation each year from entering the underground mines, becoming polluted, then exiting the three drainage outfalls into Morris Run. Consequently, the volume of influent discharge water to the treatment plant will be reduced, saving the Commonwealth considerable operating funds.

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Meet the Abandoned Mine Program Design Team

JOSE INFANTE CORONA, PE, PHD
Senior Water Resources Engineer

- 19 years of experience in the planning, design, and construction management of site development/ civil engineering projects and process engineering
- Experience in hydrological analysis and design/construction of water and wastewater infrastructure
- Advanced knowledge in hydrological modeling focused on watershed management and planning, design of separate and combined storm sewer systems and sanitary sewer systems, water supply systems, and stormwater management

BRAD SHULTZ, PE
Senior Project Manager/Mining Engineer

- Prior to Kleinfelder, Brad was a Mining Engineer for the Federal Office of Surface Mining for five years and served as a Hydrologist within the same OSM office for five years prior
- Designed more than 50 treatment systems including passive systems, semi-active systems, and rehabilitations of existing systems
- Professional Mining Engineer who understands water, earning both a B.S. in biology and M.S. in environmental pollution control

AARON PONTZER, PE
AMD/AML Design Lead

- Former Watershed Manager in the PA DEP District Mining Program and former Project Developer for the PA DEP BAMR program
- Experience in the design, review, inspection, rehabilitation, and management of active and passive AMD treatment systems
- Experience in project management, inspection, and design of abandoned mine land reclamation projects

TIBBEN ZERBY, PE
Civil Engineering/Site Conveyance

- Specializes in land development and general site design, stormwater management, erosion and sediment controls, entitlements, and conveyance design
- Additional experience in stormwater modeling, water and sewer line design and layout, and highway occupancy permitting

DAN SKAGGS, PE
Senior Engineer/Project Manager

- Over 28 years of experience in construction management and engineering design
- Held positions within mining, construction, and consulting companies, including project engineer and manager
- Developed plans for mining and reclamation, water collection and treatment, and labor/materials/ construction needs for bridge, road, and pipeline construction

Meet the Abandoned Mine Program Science Team

CLAYTON LILLY, MS
Environmental Scientist

- 13 years of experience with an emphasis on clean water, permitting, and planning
- Experience in all levels of environmental permitting and compliance, including stream and wetland delineation, environmental inspection, endangered species survey, permitting, and project/program management
- Permitting technical lead and reviewer for projects ranging from natural gas distribution and transmission to mine remediation and reclamation projects

ERIC OLIVER
Reclamation Specialist

- Specializes in GIS and mining reclamation services
- Experience with mine site compliance, project development in relation to abandoned mine reclamation, reclamation design, and construction management
- Former Mining Program Specialist at PA DEP specializing in restoration and re-vegetation of mine lands

NICK FLANDERS, CPESC, CESSWI
Project and Construction Manager

- 10 years of IT consulting experience and 14 years of engineering consulting experience
- Extensive civil design experience completing projects for industry leaders
- Provides consulting services in the water and wastewater industry, including treatment plant upgrades and conveyance installations
- Educational background in geography and environmental planning, with a current focus on engineering and business management

LADD WILLIAMS
AMD Development Project Manager

- Former West Virginia Department of Environmental Protection Mine Drainage Remediation Specialist
- Experience in the development of watershed-based plans for the treatment and monitoring of acid mine drainage (AMD)
- Specializes in conceptual designs of active and passive AMD treatment systems, and investigating and researching new technologies in mine water remediation

RAY ORLOSKI
Environmental Engineering Lead

- Managed projects including landfill cap design and installation, sediment sampling, emergency pond dewatering, well abandonment, hazardous waste disposal, soil/groundwater treatment system installation, and residential water treatment system installation
- Remediation experience with metals, waterline removal/installation, construction management, rare earth elements, and lagoon sediment solidification

About Kleinfelder
Our Services and Markets

Our Services

Environmental · Geotechnical · Design · Construction Materials
Engineering and Testing · Construction Management

Environmental

Recognizing we live in a world of finite resources, Kleinfelder's environmental engineers and scientists ensure societal development and the use of natural resources are sustainable. From project permitting to construction, to operation and into decommissioning, our technical experts apply their understanding of local, state, and federal regulations to provide full lifecycle environmental solutions.

Geotechnical

Kleinfelder's multi-disciplinary staff of geotechnical, civil, and materials engineers, as well as earth scientists and computer specialists, provides a wide range of technical resources and a depth of professional experience to address our clients' project requirements. Our diverse geography provides an added benefit of local experience, which results in cost-effective and timely service.

Design

We recognize the positive impact that good design has on our clients and communities and strive to be good stewards of our environments. Our attention to detail and responsiveness to our clients are core tenets of our work philosophy. We work with project stakeholders to provide designs that meet our clients' schedules, budget constraints, and the needs of the affected communities.

Construction Materials Engineering and Testing

Our materials engineers, project managers, construction inspectors, and testing professionals successfully provide solutions to our clients and teaming partners in transportation, water, energy, and facilities to reduce uncertainties during construction, ensure construction quality, reduce costs for future maintenance, and ultimately keep the public safe.

Construction Management

Our experienced staff provides full scope construction management and inspection services for all types of projects. From design development through project closeout, we work as a part of an integrated team, providing cost-effective and functional solutions. We carefully plan and tailor the scope for each management assignment specifically for our clients and their project needs.

About Kleinfelder
Our Services and Markets

Our Markets

Energy · Facilities · Government · Transportation · Water

Energy

We specialize in providing innovative solutions for the planning, design, construction, and maintenance of energy infrastructure. Kleinfelder's expertise extends across various sectors within the energy industry, including renewable energy, oil and gas, electric and gas utilities, and energy transition. Our team's use of new technologies and emerging tools continue to put us at the forefront of innovation and efficiency.

Facilities

Kleinfelder provides multi-faceted services for a broad range of commercial, industrial, and institutional facilities projects. Our clients face pressure to reduce costs, improve efficiency, and produce sustainable solutions for the communities in which we live and work. From site planning to systems commissioning to operations and maintenance, Kleinfelder provides services to address the needs of facilities engineering and architecture from inception to project completion and beyond.

Government

With a deep understanding of your missions—from safety and protection of local economies and communities to preserving natural resources and ecosystems—we address complex issues such as dam and levee safety, environmental assessment and remediation, ecosystem restoration, and infrastructure design and construction.

Transportation

Kleinfelder is at the forefront of delivering quality engineering solutions for a range of transportation projects, including highways, interchanges, bridges, tunnels, and other roadway structures. We work closely with both private and public sector clients to develop innovative solutions that address today's complex transportation needs with an eye on tomorrow's growth.

Water

We plan, design, and support construction of water supplies, treatment and distribution, wastewater conveyance and treatment, and stormwater management. We offer full-service consulting from environmental and geotechnical assessments through design and construction materials engineering and testing with proven program management. Through **Kleinfelder Water Technologies**, our team can also provide the design, procurement, and installation oversight for water treatment equipment.

60+ YEARS

Founded in
1961

110+

Offices in the U.S.,
Canada, and Australia

3,300+
Employees

www.kleinfelder.com

State College
330 Innovation Blvd., Suite 305
State College, PA 16803

Bridgeport
180 White Oaks Blvd., Suite 110
Bridgeport, WV 26330

Pittsburgh
2100 Georgetown Dr., Suite 201
Sewickley, PA 15143

Key Personnel Resumes

Samantha "Sami" Stahle, PE*

Senior Program Manager – Mining and Energy

Ms. Stahle has 20 years of experience in mining and civil engineering, site assessment, conceptual project development and design for mining and energy related projects, environmental permitting for infrastructure projects, feasibility studies, contract compliance and project management. She is a licensed Professional Engineer for multiple states within the eastern and central portion of the United States. She previously worked within the mining industry prior to Kleinfelder, with experience in managing asset retirement obligations related to surface and underground mining operations, processing facilities and environmental compliance. She has experience with projects from initial development to construction management related to linear projects and facilities, industrial and water treatment applications, mine site reclamation, and refuse disposal.

Years of Experience

20 Years

Education

BS – Mining Engineering, West Virginia University, 2006

MBA, West Virginia University, 2019

Professional Registrations

Professional Engineer *

(Multiple States)

No. 102442, NY

No. 38978-E, AL

No. 88978, FL

No. PE.0057369, CO

No. 062-072214, IL

No. E-84997, OH

No. PE11900788, IN

No. 35310, KY

No. PE090551, PA

No. 21122, WV

No. 61554, VA

No. 05-55257, MD

No. 053404, NC

No. 39880, SC

No. PE045373, GA

Training / Certifications

Part 48 MSHA

Selected Experience

Senior Program Manager – Abandoned Mines Program

Ms. Stahle is the current Principal-in-Charge and Program Manager for Kleinfelder's Abandoned Mines Program. The program currently supports multiple state Abandoned Mine Lands (AML) programs including PA DEP and WV DEP, third party landowners, federal agencies, and non-profit organizations. Focus is combining the expertise of the AMP team with solution-oriented project design from project development through construction for AML reclamation, Water/Wastewater Process Treatment, Title V (bond forfeiture) facility retrofit and rehabilitation, historical coal combustion residuals (CCR) disposal for alkaline amendment, and brownfield redevelopment of reclaimed facilities.

Senior Program Manager – Confidential Clients

Ms. Stahle is the current Engineer of Record and Program Manager for several large Utility client accounts, overseeing multiple projects related to electric and natural gas transmission in various geographies including PA, OH, KY, WV, MD, VA, NJ and NY. Manages a team of engineers and designers providing valuable recommendations, working closely with client staff to overcome challenges and consistently meet the expectations on deliverables for civil/environmental, trenchless and constructability projects within the Utility's vast portfolio. Duties have included but not limited to initial project development and feasibility, linear and facility civil design review and certification, site restoration design and coordination, completion of construction schedule and engineer cost estimates to assist the client in planning and bidding coordination, project coordination related to design and permitting, and on call support when necessary.

Project Manager – Various Sites in GA, AL

Ms. Stahle has supported a growing program as Project Manager and Engineer of Record for the completion of geologic investigations and mine planning evaluations for multiple properties relating to potential aggregate surface mining properties. Consideration of surface constraints, permitting strategy and general site layout are

considered as potential impacts to the feasibility related to each proposed project site.

Principal – Various Sites PA and MD

Ms. Stahle manages the on-call services for a large coal mining client in the tri-state (MD, WV and PA) area, completing annual inspections and permit review for the active and/or reclaimed mine sites where permits are still active. Activities include annual pond inspections, permit modification submissions, permit release applications and other tasks related to review and oversight as the Engineer of Record for the current mining permits for both PA and MD.

Dunkard Creek Watershed Management Plan – Project Manager/Engineer

Ms. Stahle managed the conceptual design, project execution, schedule, budget and agency coordination related to the development of a multi-phased watershed management plan along Dunkard Creek in Greene County, Pennsylvania in coordination with PA Department of Environmental Protection and various other agencies. Initial permit strategy coordination, land easements, background studies to evaluate potential abandoned mine seep locations along Dunkard Creek, water collection conceptual design, underground mine mapping, borehole placement, pump sizing and pipeline design were among the duties completed over the course of the project. Three sites were developed to eliminate AMD seeps that degraded the watershed downstream of the active mine discharge point into Dunkard Creek.

Engineering & Compliance Manager – Previous Experience

Ms. Stahle managed the engineering and compliance department (15 personnel, multiple sites in PA and WV) for a surface and underground coal mining company. Duties included by were not limited to reserve planning and reporting, capital project planning & development, environmental liabilities & permit compliance, coal refuse/CCR disposal facility expansion, perpetual water treatment facilities, mine pool dewatering, daily management activities for personnel, task priority determinations, contract compliance, project development and management, constructability reviews, and company representative for regulatory agencies.

Project Engineer – Previous Experience

Ms. Stahle was responsible for large- and small-scale project related to multiple coal mining operations ranging from substations and power distribution, borehole installation, mine site maintenance and upgrades, ventilation shaft design and installation, advanced water treatment conceptual design and pipeline installation, mine site reclamation, environmental permitting, abandoned mine site reclamation and water collection system design and oversight.

Years of Experience
28 Years

Education
Bachelors, Biology, University of Pittsburgh, 1998

Masters, Biology, California University of Pennsylvania

Work History
PA DEP Bureau of Abandoned Mine Reclamation
Intern
Ebensburg, PA
1997-2000

California University of Pennsylvania - Research Assistant
California, PA
1998-2000

Independent Watershed Restoration Consultant
Indiana, PA
2000-2007

Susquehanna River Basin Commission
Mine Drainage Program Coordinator
Harrisburg, PA
2007-2023

Kleinfelder Inc.
Project Development Manager, Abandoned Mine Program
Clearfield, PA
2023-Present

Thomas Clark

Senior Scientist / Project Development Manager

Mr. Clark has 28 years of experience specializing in the development of abandoned mine land reclamation and mine drainage treatment projects. Prior to joining Kleinfelder, he served as the Susquehanna River Basin Commission Mine Drainage Program Coordinator for 16 years. He is an expert in the assessment of mine drainage impacted watersheds and their restoration.

Selected Project Experience

Project Manager Shade Creek Active AMD Treatment Plant Development Project
Assisted in obtaining funding for and leading effort to complete a 10% design for an active treatment plant for the complete AMD restoration of Shade Creek in Somerset County PA. Treatment involves the capture and conveyance of three different deep mine discharges to a centralized plant which is placed upstream to ensure maximize restoration gains through the Borough of Central City.

Project Manager Hawk Run Active AMD Treatment Plant Development Project
Assisted in obtaining funding for and leading effort to complete a 10% design for an active treatment plant for the complete AMD restoration of Hawk Run Clearfield County PA. Treatment involves the capture and conveyance of at least two different deep mine discharges to a centralized plant. There is also potential of breaching a barrier pillar between deep mines to allow discharges from another watershed to flow to the planned plant thus restoring another tributary without the need for another treatment system.

Lead Scientist Quakake Tunnel Treatment Plant
Led effort to understand the flow dynamics of the Quakake Tunnel AMD Outfall to size a plant that can adequately treat high flows to not have occasional limit exceeding pollution events in the receiving streams. Due to analysis, a plant that PA DEP had originally sized to treat up to 10,000-GPM, which would not have been adequate, was increased to 15,000-GPM capacity. That value will treat enough of a high flow event to ensure water quality limits are met in the receiving streams.

Internal Technical Reviewer for Abandoned Mine Land Reclamation Design Projects
Tom serves as an Internal Technical Reviewer for all AML reclamation design projects being completed by Kleinfelder to ensure that all task deliverables are met prior to submittals to clients. Projects include AML reclamation designs projects at Browns Run and Grassflat Run in Clearfield County PA, Roundtop Southwest in Fayette County PA, and at Fall Brook West in Tioga County PA. Tom will also serve in this role for a very large AML design project just obtained by Kleinfelder in Schuylkill County PA that encompasses nearly 200-acres

Project Manager Bear Run Watershed Renaissance Project – Indiana County Conservation District and Susquehanna River Basin Commission, PA - 2004-2015
Awarded the first ever Watershed Renaissance Initiative (WRI) Grant by PADEP for the Bear Run Mine Drainage Watershed Restoration Project. Nine different reclamation/ treatment projects were constructed including AML reclamation, passive and semi- active AMD treatment systems, coal refuse removal, stream channel restoration, and reforestation. Projects have allowed much of Bear Run to be listed as Wild Trout, with several sections obtaining Class A status.

Rausch Creek Mine Pool Evaluation and Discharge Transport Project – Susquehanna River Basin Commission, PA – 2014 to 2018

Project entailed completing a feasibility study to determine the most cost- effective method to transport three high flow mine discharges to PA DEP BAMR's Rausch Creek Treatment Plant. The current method of treatment is the collection of the entirety of Rausch Creek for treatment into a 16-MGD capacity ATP. Obviously, that capacity is surpassed significant times of the year rendering Rausch Creek, and its receiving stream (Pine Creek), to still be listed as AMD-impaired. Project preliminarily designed a capture-conveyance of just discharge water to all but eliminate stormwater and the times of ATP capacity exceedance. Project also determined potential utilization of the mine pools as storage mechanisms for low flow augmentation.

Morris Run Active AMD Treatment Plant - Susquehanna River Basin Commission and Kleinfelder, PA – 2018 to Present

The Tioga River Watershed is significantly impacted by five (5) abandoned mine discharge (AMD) locations located near Morris Run, PA. Sections of the local streams and 22 miles of the Tioga River to which the AMDs drain have been rendered fishless due to the quality of the AMD water. The primary goal of this project is to design collection and conveyance systems for each of the five (5) AMD locations which will convey the water to a central ATP location in the Town of Morris Run. Water will be treated at the ATP to remove heavy metals and improve other water quality parameters. In addition to improving water quality within the Tioga River, the project will result in improved water quality within the reservoir system and will increase operational flexibility for the USACE. According to PA DEP BAMR personnel, once constructed, the Morris ATP may be the largest AMD specific treatment plant in the world.

West Branch Susquehanna River and Anthracite Region Remediation Strategies – Susquehanna River Basin Commission, PA – 2007 to 2011

The most comprehensive mine drainage restoration plans ever completed for these areas of the Susquehanna River Basin. These remediation strategies are now being used by state / federal agencies and local grassroots organizations to plan future remediation projects and has led to the construction of the publicly accessible online SRBC Mine Drainage Data Portal. The Anthracite Strategy included a plan to construct 10 strategically placed ATPs that would capture much of the AMD loading impacting this eastern area of the Basin. That 10 ATP plan is largely being enacted by PA DEP BAMR utilizing funds entering the state through the IIJA.

Moshannon Creek Sampling Blitz and Remediation Strategy – Susquehanna River Basin Commission and Kleinfelder, PA – 2020 to Present

Coordinated and supervised, with the newly established Moshannon Creek Watershed Association, a sampling blitz over a three-day static low-flow period throughout the entire Moshannon Creek that allowed for the first detailed AMD loading analysis of the entire watershed. Moshannon Creek was always looked upon as the "unsalvageable stream" due to the significant coverage of its AMD impacted area. However, upon the sampling blitz loading analysis, it was discovered that only three areas of the Moshannon Creek Watershed were offering most of the AMD loading; discharges around the Borough of Osceola Mills, the Hawk Run Discharge, and the discharges impacting Sulfur Run. Consequently, PA DEP BAMR is now interested in investing funds into these three areas to improve Moshannon Creek with Kleinfelder leading the effort on the treatment of the Hawk Run Discharge.

Loyalsock Creek (White Ash #3) Passive Treatment System Design Project – Kleinfelder, PA – 2023 and Ongoing

Kleinfelder was recently awarded a contract by PA DEP BAMR to redesign two large passive treatment systems on the two largest tunnel-outfall AMD discharges entering Loyalsock Creek from the semi-anthracite region in Sullivan County, PA. Designs will include more effective and easier to maintain discharge captures and bypasses, large upflow flushable oxic limestone drains (OLD), and the installation of flush ponds to capture metal precipitation. Designs will be completed over the next eight months with construction slated to occur in either summer or autumn 2024.

Accomplished Watershed Restoration Grant Proposal Writer – Indiana County Conservation District, Susquehanna River Basin Commission, and Kleinfelder, PA – 2000 to Present

Mr. Clark is an extremely accomplished grant writer for watershed restoration projects with over 50 proposals funded totaling nearly $9 million in awards. Projects funded include watershed assessment and remediation strategies, AML reclamation, passive and active AMD treatment, coal refuse removal, agricultural BMPs, natural stream design and channel restoration projects, mine land reforestation projects, low-flow augmentation, capture-conveyance, environmental education projects, and NPO formation.

Years of Experience
30 Years

Education
Bachelors, Wildlife Science, West Virginia University, Morgantown, WV, 1989

Masters, Wildlife Management, West Virginia University, Morgantown, WV, 1996

Ladd Williams

Project Manager II

Ladd Williams has over 30 years of experience in natural resources management and Abandoned Mine Reclamation. He has held senior management positions at The Nature Conservancy and the West Virginia Army National Guard. In these positions, he was responsible for managing the development of regional natural resources programs, including coordinating a variety of resource plans and integrating those plans with a Site Conservation Plan (SCP) for the globally rare regal fritillary *(Speyeria idalia)* (G3, S1), and for negotiating and administering project financing on multiple conservation projects. For the past 15 years he worked for the West Virginia Department of Environmental Protection (WVDEP) as an Acid Mine Drainage (AMD) remediation specialist, where he was responsible for characterizing and designing AMD treatment facilities on bond forfeited mine sites throughout West Virginia. He has been directly involved with conceptual design on several notable AMD restoration projects in northern West Virginia. He has experience with AMD Treatment Restoration design, conservation program development, threatened and endangered species planning, environmental compliance, water quality monitoring, watershed modeling and program/project management.

Acid Mine Drainage Remediation Experience

- **Acid Mine Drainage (AMD) Reclamation Design**: AMDTreat utilization, evaluate treatment options, compare long-term treatment costs, generate conceptual treatment designs of AMD impacted mine sites.
- **Field Investigation**: Characterize/analyze mine site water quality, prepare water liability estimates, investigate/review new reclamation procedures, landowner negotiation, right of entry agreements, mine pool monitoring.
- **Water Quality:** Pre-construction water sampling/monitoring on AMD impacted sites, perform chemical titrations to characterize water chemistry and simulate water treatment, implement water monitoring network, maintain communication with state and federal agencies on NPDES related issues, water quality monitoring procedures, water treatment protocol, fish and benthic macroinvertebrate sampling.
- **Permitting/Database Management**: review NPDES permits, maintain/manage water database.
- **Technical writing:** Authoring and review of technical documents, including bid packages.
- **Project Management & Oversight**: Provide assistance in construction surveillance and quality assurance of construction work to ensure reclamation work is performed according to plan. Serve as point of contact for contractors, inspectors, consultants, utility companies, property owners, watershed groups, etc. for design and construction issues and clarifications.

Select Project Experience - Kleinfelder

Project Manager (PM) Browns Run and Grassflat Run AML Reclamation Project

Mr. Williams currently serves as the PM on the Brown's Run and Grassflat Run AML reclamation project in Clearfield County, Pennsylvania. The project aims to eliminate public health and safety hazards associated with surface AML's, particularly dangerous highwalls, open mine portals and pits. Restoring these mine lands through highwall reclamation will ultimately improve waters within the Moshannon Creek Watershed.

Project Manager (PM) Fall Brook West AML Reclamation Project

Mr. Williams currently serves as the PM on the Fall Brook West AML reclamation project in Tioga County, Pennsylvania. The project aims to eliminate public health and safety hazards associated with surface AML's, particularly dangerous highwalls and open pits. Restoring these mine lands through highwall reclamation will ultimately improve waters within the Tioga River Watershed.

Assistant Project Manager (APM) West Fork # 9 AML Reclamation Project

Mr. Williams currently serves as the APM on the West Fork #9 AML reclamation project in Harrison County, West Virginia. The project includes reclamation design of Dangerous Impoundments, Subsidence Areas, Open and Collapsed Mine Portals and a Dangerous Slide on the West Fork River Rail Trail.

Assistant Project Manager (APM) Shinnston (Sheppard) AML Reclamation Project

Mr. Williams currently serves as the APM on the Shinnston (Sheppard) AML reclamation project in Harrison County, West Virginia. The project includes reclamation design of a Dangerous Slide and an Open Mine Portal draining approximately 1000 gallons per minute of mine drainage into the West Fork River.

Select Project Experience - WVDEP

Muddy Creek Watershed Improvement Project, Preston County, WV. Mr. Williams Served as the Watershed Restoration Specialist for the Muddy Creek Restoration Project. To improve water quality and restore the Lower Muddy Creek watershed, the WVDEP's Office of Special Reclamation (OSR) concentrated on the major sources of AMD throughout the watershed by constructing industrial water treatment facilities, to include the T&T Treatment facility, and the Glade and Martin Creek Instream dosing facilities. In 2018, WVDEP-OSR completed the construction of the T&T Treatment Plant and began treating AMD in late January 2018. The T&T Treatment Plant is a High-Density Lime Slurry System for neutralization and pH control, capable of treating 4,200 gallons per minute of acid mine drainage. The treatment plant, also known as the "Muddy Creek AMD Plant" addresses pre and post law mine discharges throughout the Muddy Creek Watershed.

Sandy Creek Watershed Improvement Project, Preston and Taylor Counties, WV

Mr. Williams Served as the Watershed Restoration Specialist for the Sandy Creek Watershed Improvement Project. To improve water quality and improve the lower reaches of the Sandy Creek watershed, The WVDEP Office of Special Reclamation (OSR) installed two AMD treatment systems within the Little Sandy Creek watershed. One system was installed on Maple Run and the other on Left Fork of the Little Sandy. These in-stream units use an auger and vibrator system to dispense hydrated lime directly into the stream. Both Maple Run and the Left Fork unit are connected to grid power and operated 24/7/365.

Ecological/Natural Resources Experience

Wild Natural Resource Use in the Central Appalachians: An Exploratory Study of Randolph County, West Virginia, 1996, Master's Thesis, West Virginia University, Morgantown, WV.

- **Natural Resources Planning** and development of the Amy National Guard's Integrated Natural Resources Management Plan for PA and WV.
- **Eco-regional Habitat and Natural Communities Conservation Plans** in Southeastern and North-central Pennsylvania wildlands.
- **Rare Species Surveys/Plans/Monitoring** for the Regal fritillary (*Speyeria idalia*), Bog turtle (*Glyptemys muhlenbergii*), Timber rattlesnake (*Crotalus horridus*) and several other Threatened and Endangered Species on public lands.
    - **Williams, L. B.** 1999. *Monitoring the Regal Fritillary (Speyeria idalia) at the Fort Indiantown Gap National Guard Training Center.* The Pennsylvania Army National Guard.
    - **Williams, L.B.** 1999. *Site Conservation Plan for the Regal Fritillary (Speyeria idalia) at the Fort Indiantown Gap National Guard Training Center*. The Pennsylvania Army National Guard.
    - **Williams, L.B**. 2002. *Bats of Camp Dawson, West Virginia: Relative Abundance, Habitat Use, and Periods of Activity.*
- **NEPA Compliance and Reporting** for over 25 Army National Guard (ARNG) projects located in Pennsylvania and West Virginia.
- **Ecological (prescribed) Burning** on Tall grass prairie, Longleaf pine-wiregrass and successional plant communities on TNC and ANRG lands in MN, NM, SC, PA and WV.
- **Ecological Restoration** on riparian reforestation projects in CA and WV.
- **Invasive Species management** plans and implementation for rare species and general land management in CA, PA, and WV. 2007 ESRI Conference *"Invasive Species Eradication Program at the Camp Dawson Army Collective Training Center"*.
- **Wildlife Management Plan** development and implementation for PA Game Commission and USFWS.
- **Stream and Wetland Mitigation** on WV ARNG actions involving WV 401 and 404 U.S. Army Corps of Engineers (USACE) permitting and compliance.
- **National Public Lands Day** recipient 2003-2009 for natural resource projects on public lands.
- **Cooperative Agreements** played lead role in developing partnerships with wide variety of local, state and federal agencies and non-profit organizations.
- **Training** instructor on conservation planning, Invasive Species/Pest management, HAACP, prescribed fire management, AMDzine, and water quality sampling techniques.

Years of Experience
25 Years

Education

Bachelors, Biology, Millersville University, Millersville, PA, 1993

Masters, Environmental Pollution Control, Pennsylvania State University at Harrisburg, Middletown, PA, 2002

Registrations
Professional Engineer (PE)-Environmental, No. PE086260

Bradley Shultz

Energy and Abandoned Mines Senior Civil Engineer

Mr. Shultz is an accomplished Mining Engineer with extensive experience at the Office of Surface Mining Reclamation & Enforcement, demonstrating expertise in environmental engineering and hydrology. He is skilled in designing and implementing mine reclamation and mine water treatment projects throughout the Appalachian Region, showcasing leadership in technical training and software development and has a strong foundation in water quality and flow monitoring equipment and project management.

Selected Project Experience

SCWA - Shade Creek Project Development, Shade Creek Watershed Association, Cairnbrook, PA, From 05-2025 To 07-2025
Quality Control Lead for the Shade Creek Abandoned Mine Discharges Treatment Plant Development in Somerset County, PA. Reviewed technical deliverables related to AMD investigation, survey, GIS, geotechnical analysis, mine mapping, and process engineering. Focused on consistency with project requirements, design standards, and coordination across disciplines during the development of the conceptual treatment plant sizing and design.

AMDTreat Software Development, Office of Surface Mining Reclamation and Enforcement, Pittsburgh, PA, From 08/2016 To 04/2025
Served a primary member of technical team to re-program and develop an updated version of the AMDTreat cost estimation software initially developed and released by OSMRE in 2003. Helped update and improve treatment technology modules, create new and improved design tools, and also helped create the configuration and layout of the new PHREEQ-N-AMDTreat geochemical modeling tool within the latest version of the software (Beta version 6.0).

WV AML N1 Abandoned Mine Reclamation Projects, WV Department of Environmental Protection Office of Abandoned Mine Lands, Fairmont, WV, From 05/2025 To Current
Served as senior engineer with the project team on the design of AML reclamation for identified features at four (4) different project sites located within Barbour and Harrison Counties, WV. The AML features to be reclaimed includes dangerous highwalls, dangerous slides, dangerous impoundments, and the routing of drainage from abandoned underground mine workings onto a stable and adequately sized feature to the nearest watercourse. The project involves the full engineering design and permitting for these four project sites including technical specifications and complete drawing sets ready for construction.

Hawk Run Active Treatment Plant (ATP) Development Pennsylvania Department of Environmental Protection, Bureau of Abandoned Mine Reclamation, Clearfield, PA, From 07/2025 To Current
Project Design Lead for the Hawk Run Active Treatment Plant (ATP) Development in Clearfield County, PA. Leading design efforts for early-stage development (10% Conceptual) of an AMD treatment facility addressing major iron, aluminum, and acidity loading sources to Moshannon Creek.

Bear Run South AMD Passive Treatment, Indiana County Conservation, District Banks Twp, Indiana Co, PA, From 06/2025 To Current

Project Design Lead for the design and implementation of three passive AMD treatment systems to address iron, aluminum, and acidity loading from past mining activities in the South Branch of Bear Run, a tributary of the West Branch Susquehanna River. The project builds on two decades of restoration efforts and aims to fully rehabilitate the watershed. Responsibilities include managing survey, passive treatment design, permitting, and including conversion of outdated infrastructure and conceptual planning for previously unfeasible AMD seeps.

Mine Drainage Treatment Technical Assistance, Maryland Dept. of the Environment Abandoned Mine Lands Division, Frostburg, MD, From 05/2021 To 04/2025

Assisted the AML personnel based on a technical assistance request with troubleshooting and providing conceptual design suggestions to improve the overall treatment effectiveness of existing semi-active treatment systems at the Kempton and McDonald sites in Garrett County (MD). Both systems utilize a lime product to impart alkalinity to increase the pH and oxidize and precipitate dissolved metals (iron and aluminum), with flows at Kempton exceeding 3,000 gpm (median flow = 1,300 gpm) and the McDonald discharge exceeding 500 gpm (median flow = 100 - 200 gpm). Both systems were recommended for converting from pebble quicklime to hydrated lime to improve dissolution and Kempton also needed improved pre-aeration prior to lime addition, new lime dosers and mixing vessels, and expanded settling features for both systems due to high solids generated from the treatment processes.

Mine Drainage Treatment Technical Assistance, Pennsylvania Dept. of Environmental Protection (Bureau of Abandoned Mine Reclamation), Ebensburg, PA, From 01/2015 To 04/2025

Provide as needed technical assistance to BAMR personnel on existing active and passive mine drainage treatment systems that are not performing as designed or are in need of improvements. Performed field visits including flow and water chemistry measurements, dye tracer tests, GPS surveying of features, and used this information to conduct data analysis and geochemical modeling to problem solve the treatment system issues. When necessary assisted with or performed the engineering design of the system improvements.

Publications

Primary Author, The Barnes & Tucker #20 Mine Drainage Treatment Facility: Optimization Case Study in Consideration of Variable Flow and Water Chemistry, Proceedings of the 2024 Joint Conference: West Virginia Mine Drainage Task Force & International Mine Water Association Congress in Morgantown, WV, Mine Drainage Treatment, Case Study

Seminars & Training

Student, Software Training, Office of Surface Mining Reclamation & Enforcement (OSMRE), TIPS HEC-RAS Modeling Course, Length: 3 days, Date Completed: Invalid date

AARON PONTZER, PE

AMD/AML Design Lead

Mr. Pontzer has 25 years of experience in environmental and civil engineering, site assessment and design for abandoned mine drainage (AMD) treatment systems and abandoned mine reclamation (AML) projects, erosion and sedimentation control, stormwater management, environmental permitting for infrastructure projects, contract compliance and project management. He is a licensed Professional Engineer in the Commonwealth of Pennsylvania. He has experience with projects from initial development to construction management related to water treatment applications, mine site reclamation, transportation, and power/energy related to linear projects and facilities. He has worked in both the regulatory and private consulting sectors.

Years of Experience

25 Years

Education

Bachelors, Geo-Environmental Engineering,
Penn State University,
University Park, PA, 1995

Masters, Engineering - Environmental Pollution Cont.
Penn State University,
University Park, PA 1997

Certification

(PE), No. PE070696, PA

Work History

Blazosky Associates, Inc.
(now BAI Group)
Professional Engineer
State College, PA
2009-2011

PA DEP
Bureau of Abandoned Mine Reclamation
Civil Engineer
Harrisburg, PA
2013-2015

PA DEP
Moshannon District Office
Watershed Manager/ Compliance Specialist
Philipsburg, PA
2015-2023

Kleinfelder Inc.
AMD/AML Design Lead,
Abandoned Mine Program
Centre Hall, PA
2023-Present

Selected Project Experience

PA DEP Moshannon District Office, Watershed Manager

As the Watershed Manager, Mr. Pontzer's duties centered on improving water quality within targeted watersheds impacted by Abandoned Mine Drainage (AMD). He worked on projects to improve water quality for Alternate Bonding System (ABS) Sites and treatment of AMD discharges on bond forfeiture sites. He was responsible for contract execution and oversight of bond forfeiture reclamation projects, Trust Funds, and oversight of contracts for treatment of AMD discharges and the construction and maintenance of mine drainage treatment systems.

PA DEP Bureau of Abandoned Mine Reclamation (BAMR), Project Development

Mr. Pontzer worked with the PA DEP BAMR, Division of Project Development to evaluate civil, mining, and environmental engineering problems to prioritize and develop abandoned coal mine reclamation projects. He planned and performed field investigations of abandoned mine lands to determine the location, extent, and impact of hazards, health and safety problems, environmental degradation, and past mining as it relates to the general public and property owners. This information was used to recommend types of reclamation work and to estimate reclamation costs.

Roundtop Southwest Abandoned Mine Reclamation, Fayette Co., PA

This Abandoned Mine Reclamation Project includes landowner engagement, survey, design, permitting, and construction bidding and management services. The site includes five Priority II (PII) Dangerous Highwalls, one PIII Highwall, six PIII Spoil Areas, and two PII Portal/Mine Openings that will be reclaimed as pastureland, forest, and will have bat gates installed on the underground mine openings. This project will reclaim abandoned mine hazards on properties owned by seven private landowners. Mr. Pontzer is the lead designer and the point of contact for the Kleinfelder project team.

Loyalsock Creek (White Ash #3) Passive Treatment System Design Project

Kleinfelder was recently awarded a contract by PA DEP BAMR to redesign two large passive treatment systems on the two largest underground mine tunnel-outfall AMD discharges entering Loyalsock Creek in Sullivan County, PA. Designs include more effective and easier to maintain discharge captures and bypasses, large upflow flushable oxic limestone drains (OLD), and the installation of flush ponds to capture metal precipitation. Mr. Pontzer is involved with the field investigations, collection of water quality and site data, and the design of the treatment systems.

Resume

Years of Experience
10 Years of IT Consulting
14 Years of Engineering Consulting

Education:

MBA, Engineering Management, Point Park University, PA, In Progress

Bachelors, Regional & Environmental Planning, Indiana University of Pennsylvania, PA, 2011

Bachelors, Geography, Indiana University of Pennsylvania, PA, 2011

Associates, Information Sciences and Technology, Penn State University, PA, 2001

Registrations:

CPESC
CESSWI

Skills:

Project Management
Construction Management
E&S and PCSM BMP Design
Stream and Wetland Mitigation
Inspection and Compliance
PA Chapter 94/102/105/106 Permitting
NEPA Permitting
FHWA Permitting
NPDES Permitting
ESCGP & FERC Permitting
CADD and GIS
Land Surveying
Wetland Delineating

Nick Flanders

Project Manager II

Professional Profile

Mr. Flanders has 10 years of IT consulting and 14 years of engineering consulting experience. His consulting career has allowed him to gain broad experience in facilitating and managing the implementation of engineering services for clients. He has extensive civil design experience completing projects for industry leaders, technical prowess, and field experience. For more than the past 3 years, he has provided consulting services in the water and wastewater industry, including treatment plant upgrades and conveyance installations while managing municipal clients.

Project Experience

Project and Client Management:

Quakake Tunnel AMD Treatment Facility –
Mr. Flanders provides project management services, leading a multi-disciplinary team offering project management services for the design of an active treatment facility that treats up to 15,000 gpm of abandoned mine discharge. He is the point of contact for client communications, handles budgetary conditions, and oversees the completion of the overall project.

Lycoming County Sewer and Water Authority
Mr. Flanders is providing project management services for a municipal water authority, developing scope, delivering plans, and managing design, and construction efforts to deliver projects on time and under budget.

Conneaut Lake Joint Municipal Authority –
Mr. Flanders provided municipal engineering, design, inspection and construction management services for the sanitary authority. This included correspondence with the authority's board members, customers, and general public on a regular basis. He obtained funding sources for projects, created budgets, implemented projects, oversaw the construction, and closing out and recording of completed projects.

Canonsburg-Houston Joint Authority –
Mr. Flanders organized, facilitated and maintained the sanitary authority's inspection program and GIS asset management system.

French Creek Land Management LLC. –
Mr. Flanders provided a feasibility study, government and public liaison, and engineering and design services for a proposed development project.

Borough of North East & North East Township –
Mr. Flanders designed and implemented a GIS Asset Management system for the municipalities, of which included inspection workflow and asset servicing notification.

Ellwood City –
Mr. Flanders organized the permitting and design efforts for a new pump station and conveyance construction project and designed and implemented a GIS program for the city.

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Army Corps of Engineers Permitting:

Conneaut Lake Municipal Authority –
Mr. Flanders performed all aspects of the NPDES and ACoE Joint Permit Application including special studies, agency coordination, and public communication for the Sewer Line Separation and Wastewater Treatment Plant Upgrade Project. This included extensive federal and state agency correspondence, public meetings, HDD design, procurement of geotechnical studies, wetland delineations, permit composition, stormwater management designs, and funding procurement

Field Engineering:

Energy Transfer, Revolution Emergency Repair Project –
Mr. Flanders designed repairs and managed the field crews for mechanized equipment ingress/egress, land slide repair, and the installation of E&S and PCSM BMPs for a 42-mile failed pipeline R/W. He also developed and implemented a field monitoring and remote reviewing system of the R/W to allow agencies across the state to have real time access to the repairs.

Engineering, Design, Permitting, Compliance Clients:

Advanced Disposal – 1 year of landfill compliance reviews and landfill expansion designs.
Chevron Corporation - 2 years of engineering and design services of site development for gas extraction pads.
Consol Energy Inc. – 3 years of engineering and design services for coal extraction and pipeline projects.
Dominion Energy Inc. – 4 years of engineering, permitting, design services for transmission pipeline R/Ws.
EQT Corporation – 4 years of engineering, permitting, design services for transmission pipeline R/Ws.
First Energy – 2 year of engineering services for site remediation and environmental assessments.
Kinder Morgan – 2 years of engineering services for pipeline R/W design.
Mark West – 2 years of engineering services for pipeline R/W design.
NRG Energy – 1 year of engineering services for NPDES compliance.
PennDOT – 2 years of engineering services for PA-Turnpike expansion projects.
Penn State University – 2 years of engineering services for expansion development.
Peoples Natural Gas – 3 years of engineering services for pipeline maintenance, repairs, and expansion.
Shell Corporation – 3 years of engineering services for site development of oil and gas extraction pads.
Siemens – 1 year of engineering services for Lordstown Energy Center upgrades.
Sunoco Logistics – 2 years of engineering services for pipeline R/W design.
TC Energy – 2 years of engineering services for pipeline replacement and multistate permitting.
Williams Energy – 3 years of engineering services for pipeline R/W design and inspection.

Wetland Delineation Reports:

Mr. Flanders has extensive experience performing stream and wetland delineations and composing necessary wetland reports to determine resources in a study area for projects.

Uniform Environmental Review:

Mr. Flanders has performed numerous environmental reviews for project requiring reviews associated with the Pennsylvania PennVest load Program. Additionally, he has performed environmental reviews in the state of New York for development projects.

Years of Experience
13 Years

Education
Bachelor of Arts, English

West Virginia University, Morgantown, WV:2003

Master of Science, Forest Hydrology – West Virginia University, Morgantown West Virginia: 2017

Registrations/ Certifications
SGA: Env Compliance during Pipeline Construction

SafeLand Training

Stormwater Management for O&G

Qualified Preparer of Stormwater Plans

Work History
West Virginia University
Hydrology Lab Tech
2009 - 2012

The Thrasher Group
Project Manager
2018 - 2021

AllStar Ecology
Project Manager
2012 - 2018 and 2021 – 2023

Kleinfelder, Inc
EP&P Team Lead
2023 - Current

Clayton Lilly
EP&P Team Lead

Mr. Lilly is a Senior Professional with 13-years of experience as an environmental professional, with an emphasis on Clean Water Act Section 404/401 permitting and planning. Currently Mr. Lilly functions as a permitting technical lead and reviewer for projects ranging from natural gas distribution and transmission line replacements, complex warehouse site development projects, and mine remediation and reclamation projects throughout the Mid Atlantic. Mr. Lilly routinely oversees all aspects of permitting, including state level conservation district and regional office coordination as well as federal Endangered Species Act Section 7 and National Historic Preservation Act (NHPA) Section 106 compliance. Mr. Lilly has worked at all levels of environmental permitting and compliance, including stream and wetland delineation, environmental inspection, endangered species surveys, permitting, and project / program management.

Selected Project Experience

Natural Gas Distribution, Transmission, Well Pad, & Facility Permitting
Environmental Project Manager responsible for coordinating fieldwork, permitting, and environmental inspections for over 100 Marcellus/Utica Shale natural gas infrastructure and over 200 distribution and transmission line replacement projects. Responsible for the project management of activities associated with erosion and sediment control permitting, CWA 404/401 compliance, USACE regulated stream and wetland impacts, state regulated stream and wetland impacts, stream and wetland mitigation, T&E species consultations/surveys, architectural and archaeological surveys, and driveway and haul route permits. Performed QA/QC oversight on all permitting related deliverables and interacted regularly with all applicable agencies.

Mine Reclamation and Remediation Permitting
Environmental technical lead responsible for permitting scope, planning, and management associated with multiple active AMD treatment plants and AMD remediation projects in Pennsylvania (PA) and West Virginia. Final QA/QC at all stages of project development for deliverables associated with PA Chapter 105 and CWA 404 clearance, including stream and wetland delineations, T&E species evaluations, applicable conservation district and local municipality coordination, evaluating secondary effects of watershed area change, stream remediation and design, stream and wetland mitigation, erosion and sediment control design, and coordination with state and federal agencies.

Warehouse Distribution Facility Permitting
Environmental technical lead / manager for 10+ large-scale distribution facilities (warehouse). Responsible for all aspects of CWA 404/401 compliance, stream and wetland delineations, T&E species evaluations, applicable conservation district and local municipality coordination, integrating geotechnical data with hydrologic evaluations of secondary effects of watershed area change, and coordination with state and federal agencies. Worked closely with civil design and agency reviewers for both on-site and off-site stream and wetland mitigation.

Solar Development and Data Center Site Permitting
Environmental technical lead for large scale solar development and data center siting projects. Involved in all stages of project development from initial desktop review of natural resource and municipal permitting concerns to development of risk review analyses. Managed large-scale coordination of T&E bat species, including the creation of Habitat Assessment and Conservation Plans for Indiana and northern long-eared bats with long-term monitoring of bat box conservation

measures. Coordinated USACE jurisdictional determination of aquatic feature status for use in both site planning and permitting.

Biological Assessments

Environmental technical lead for T&E species biological assessments. Noted projects include a biological assessment for candy darter (*Etheostoma osburni)* related to dam removal and replacement for a municipal water supply, and a large-scale freshwater mussel survey to assess species habitat, distribution and diversity on the Tennessee River for a bridge replacement project. Responsible for task management, survey design, USFWS coordination, and all reporting QA/QC.

Tibben Zerby, PE

Professional Engineer

Mr. Zerby has first-hand experience in residential and commercial land development projects, especially related to stormwater and erosion and sedimentation control design as well as sewage planning and on-lot septic systems. Mr. Zerby is also familiar with water and sewer line design and required permitting, including PennDOT highway-occupancy permits. His experiences include stormwater and erosion and sedimentation best management practice designs, stormwater modeling, waterline design, sewer line design and layout, highway occupancy permitting, ADA curb ramp design, and sidewalk layout. Software experience includes VTPSUHM, HY-8, and AutoCAD.

Years of Experience

12 Years

Education

Bachelors, Biological Engineering,
Pennsylvania State University, 2014

Registrations/ Certifications

2020, PE, PA, No. PE091751

2016, Certified Sewage Enforcement Officer, No. 03946

2017 Onsite Wastewater Megaconference – Large Onsite Systems

2017 PennDOT – Highway Occupancy Permits – Utility Facilities

Selected Project Experience

Banning #4 Acid Mine Treatment Facility

Civil Engineering Lead responsible for the civil portion of the acid mine treatment plant plan preparation and design including site access, plant pad layout and grading, stormwater management and erosion and sedimentation control. Mr. Zerby was also responsible for local permits for land development and road use for the project.

Morris Run Active Treatment Plant (ATP), Susquehanna River Basin Commission, Harrisburg, PA

Project Engineer, The Tioga River Watershed is significantly impacted by five (5) abandoned mine discharge (AMD) locations located near Morris Run, PA. Sections of the local streams and 22-miles of the Tioga River to which the AMDs drain have been rendered fishless due to the quality of the AMD water. The primary goal of this project is to design collection and conveyance systems for each of the five (5) AMD locations which will convey the water to a central ATP location in the Town of Morris Run. Water will be treated at the ATP to remove heavy metals and improve other water quality parameters. In addition to improving water quality within the Tioga River, the project will result in improved water quality within the reservoir system and will increase operational flexibility for the USACE.

Brown's Run & Grassflat Run AML

Project Engineer, Oversaw the design and grading of two AML reclamation projects encompassing approximately 120 acres. Design included the removal of high walls, impoundments, regrading to approximate original grade, and erosion and sedimentation control design for the earthmoving activities.

Franklin Township Wastewater Treatment Plant (WWTP)

Project Engineer, a new 25,000 GPD WWTP for the Village of Lairdsville in Lycoming County, PA. Work on the project included, existing conditions plan development, sanitary sewer collection system design, WWTP design, local and state permit application preparation (WQM, NPDES for discharge, PennDOT HOP, PA DEP General Permits), bid document preparation administration, Construction Contract Administration for the four associated construction contracts, and funding application and administration.

White Ash #3/Loyalsock AMD Passive Treatment Project

Project Manager/Engineer, oversaw the design of two replacement passive treatment systems for two mine discharges in Sullivan County, Pa. The proposed systems were designed to replace two failing systems with a baffled limestone ramp system and a oxic limestone drain. Project included access design, passive system design, landowner correspondence, and environmental permitting.

Powdr-Woodward, PA LLC Land Development
Project Engineer, worked on land development projects including the addition of 13,000 SF activities building, multiple cabins, outdoor skate park, obtained project associated permits including: PA DEP Sewage Planning Module, NPDES permits, zoning permits, etc. Completed plan preparations, represented client at municipal meetings, and worked with builders through construction.

Foxdale Village Corporation Land Development
Project Engineer, worked on land development projects including the building and site renovations including layout of a 64-stall parking lot, associated stormwater controls, lot consolidation plan, erosion and sedimentation control documentation, sidewalk and crosswalk design, campus stormwater design and other campus updates.

Hazelton City Authority to Stockton Waterline Extension Project
Project Engineer completed waterline design and layout for the 1.2-mile waterline extension and obtained all project associated permits including: Individual NPDES permit, Erosion and Sedimentation Control Approval, Highway Occupancy Permit, General Permit-5 Utility Line Stream Crossing. Attended public meetings to discuss project scope and impact, as well as field survey work to locate existing features and build base mapping for the project.

Daniel Skaggs, PE

Senior Engineer and Project Manager

Dan Skaggs has over 27 years of experience in construction management and engineering design. He has held positions with various mining, construction, and consulting companies. These positions included project engineer and manager. In these positions, he was responsible for developing plans to mine and reclaim, seep water collection and treatment on previous mine sites, and coordinating labor, materials and construction for bridge, road, and pipeline construction.

Years of Experience

27 Years

Education

Bachelors, Civil Engineering
West Virginia Institute of Technology, Montgomery, WV. 1997

Acid Mine Drainage Remediation Experience

Acid Mine Drainage (AMD) Reclamation Design: Propose and evaluate treatment options, compare long-term treatment costs, generate conceptual treatment designs for AMD impacted mine sites.
Technical writing: Authoring technical documents, including review of technical design packages and involvement with bid packages.

Select Project Experience

Mine Drainage Control

Mr. Skaggs served as the Project Engineer for acid mine drainage collection system on a surface mine in Greene County, PA. Mr. Skaggs helped develop the gravity collection system and the pump station that lifted the water to the pond that was to treat the water temporarily while the final design was being implemented.

Mr. Skaggs served as the Field Engineer during the construction of the seep water collection system on an old mine site in Monongalia County WV. Mr. Skaggs oversaw site preparation, constructing the lined treatment ponds, constructing the gravity feed collection system, and the placement of collection tank and pump system.

Project Management Experience

Mr. Skaggs was the project manager on several mine reclamation and construction projects. Tasks included putting together bid packages, technical specifications, pre-bid meetings and construction oversight.

Select Project Experience

4 West Deep Mine Reclamation – MEPCO, LLC
Overland Conveyor Belt Reclamation MEPCO, LLC
Warehouse Construction – Republic Energy
Fuel Yard Construction – Republic Energy
Road, Box Culvert, and Waterline System DLB - Construction.
I-77 Bridge Construction – DLB Construction

Years of Experience
37 Years

Education
Carver Technical Center,
Charleston, WV. 1987

Work History
S & S Engineering.
Drafter,
Charleston, WV 1987-1988

Mountain State Company
Senior CADD Designer,
Cedar Grove, WV 1988-2022

Raven Crest Contracting LLC
Engineering Technician,
Ashford, WV 2022-2024

Kleinfelder Inc.
Senior CADD Designer,
Abandoned Mine Program
Bridgeport, WV 2024-Present

Wayne Davis
Senior CADD Designer

Mr. Davis has 37 years of experience in the civil engineering field, with extensive expertise in CAD design for mining, reclamation, and environmental projects. He has led the preparation of detailed 2-D and 3-D layouts, coordinated permit services, conducted production tracking, and produced compliance reports for large-scale mining operations. His work has supported efficient project execution, ensured regulatory compliance, and delivered accurate technical documentation for engineering teams.

Select Project Experience

WV AML Projects

Mr. Davis serves as the lead CADD Designer for the current AML in West Virginia.

Raven Crest Contracting LLC

Mr. Davis assisted environmental and surface mine engineers with daily operations and reclamation planning. He conducted drone mapping flights, both programmed and manual, to measure stockpile tonnage and mine overburden, and to support permitting activities. He designed flight routes, captured high-resolution imagery, and converted data into accurate maps and volumetric reports, enabling better decision-making for mine operations and environmental compliance.

Mountain State Company

In this long-term role, Mr. Davis produced detailed engineering drawings for mining, civil, and environmental projects, applying both 2-D and 3-D design techniques. He designed permits, plotted geologic core holes, determined haul road and fill locations, and created balanced cut-and-fill designs. He developed stormwater and sediment control systems, sized ponds and ditches, and mapped deep mines for tonnage calculations and projections. He also supervised junior CAD technicians, coordinated deliverables, and supported diverse projects including parking areas, landfill encapsulation, highway stakeout, conveyor layouts, and subdivisions.

Joece Lynn

Environmental Scientist

Ms. Lynn has 3 years of experience in the development of abandoned mine land reclamation and mine drainage treatment projects. Prior to joining Kleinfelder, she served as the Indiana County Conservation District Watershed Project Coordinator through AmeriCorps and previously worked as a GIS Technician for the Institute for Mine Mapping, Archival Procedures and Safety.

Years of Experience

3 years

Education

Bachelors, Environmental Studies and Geography, University of Pittsburgh, 2019

Masters, Geography, Indiana University of Pennsylvania, current

Work History

Penn State Roots Lab –Paid Research Intern
State College, PA
2018

Institute for Mine Mapping, Archival Procedures and Safety-IUP
Indiana, PA
2021-2023

Indiana County Conservation District
Watershed Project Coordinator
Indiana, PA
2023-2025

Kleinfelder Inc.
Environmental Scientist,
Abandoned Mine Program
State College, PA
2025-Present

Selected Project Experience

Bear Run Watershed Project – Indiana County Conservation District

There has been a long-term initiative to restore the South Branch of Bear Run, which has been severely impacted by abandoned mine drainage (AMD). While the upper portions of the stream support native brook trout, the downstream sections were lifeless due to AMD discharges. Beginning in 2007, the project was carried out in multiple phases. Early efforts included the construction of passive treatment systems like settling ponds and aerobic wetlands, and the removal of coal refuse piles, improving water quality significantly raising pH to around 8.1 in the stream. Subsequent phases involved stream channel restoration, oxic limestone drains, and further AMD treatment infrastructure. As of 2024, South Branch of Bear Run shows strong signs of ecological recovery, with improved macroinvertebrate populations and potential for trout stocking. The project continues to move forward, with $195,283 in new funding from the PA DEP's AMD grant program to replace outdated lime silo systems and enhance treatment effectiveness using additional passive treatment technologies.

Two Lick Watershed Project – Indiana County Conservation District

The Upper Two Lick Creek Assessment evaluated the North and South Branches as well as the main stem upstream of the Two Lick Reservoir, with the goal of identifying sources of AMD pollution and establishing restoration targets. This project, which ran from late 2022 through 2023, is a collaboration between the District, Hedin Environmental, Blacklick Creek Watershed Association, Kiski-Conemaugh Stream Team, and local university students. The Lower Two Lick Creek Assessment, launched in 2024, is still ongoing and targets the section of the creek downstream of the reservoir to its confluence with Blacklick Creek. It focuses on analyzing the impact of AMD sources such as the Lucerne 3A discharge and Lower Yellow Creek. Both projects aim to improve stream health, guide future remediation efforts like passive treatment systems or streambank stabilization, and build partnerships between state agencies, local governments, and community stakeholders.

Eureka Mine Project: A Suspended Sediment Analysis of Paint Creek – University of Pittsburgh at Johnstown

Project entailed completing a localized watershed delineation of the coal refuse pile at Eureka Mine No. 37 copiloting a DJI drone to collect hillshade and DEM data. This assessed how runoff from the historic Eureka Mine No. 37 effects sediment deposition in Paint Creek, a tributary of the Stony creek River in Windber, Pennsylvania. Using drone imagery, LiDAR, and GIS mapping, the project delineated the watershed draining from the mine site and identified potential runoff channels into Paint Creek. Fieldwork included collecting suspended sediment samples. Lab analysis revealed notably higher sediment loads downstream compared to upstream, suggesting the mine site's waste pile contributes to sediment pollution in Paint Creek.

KLEINFELDER

Charles A. Cravotta III

Hydrologist/Geochemist
https://www.researchgate.net/profile/Charles-Cravotta
CravottaGeochemical@gmail.com

Cravotta Geochemical Consulting, LLC
859 Bloody Spring Road
Bethel, Pennsylvania

Education

1996 Ph.D. Geochemistry and Mineralogy, Pennsylvania State University
1986 M.S. Geochemistry and Mineralogy, Pennsylvania State University
1979 B.A. Environmental Sciences, University of Virginia

Professional Experience

More than 40 years of experience evaluating geochemical and hydrological processes that control water quality, particularly the sources, transport, and attenuation of metals and nutrients in undisturbed and mining-impacted watersheds and aquifers. Extensive interactions with students as external research advisor. Results apply to scientific and regulatory programs for prevention and remediation of aquatic contamination.

2024-Present: Hydrologist/Geochemist, Cravotta Geochemical Consulting, LLC.
1987-2023: Research Hydrologist, U.S. Geological Survey, Pennsylvania Water Science Center.
1986-1987: Geochemist, IT Corporation, Monroeville, PA.
1979-1983: Geologist/Map editor, U.S. Geological Survey (USGS), Technical Reports Unit, Reston, VA.
1979: Geologic Technician, Virginia Water Control Board, Alexandria, VA.

Professional Certification and Affiliations

2018-present: Adjunct Instructor, Earth and Environmental Sciences, University of Pittsburgh
2011-2016: Associate Editor, Mine Water and Environment, International Mine Water Association
2001-2017: Environmental and Civil Engineering Advisory Board, Penn State University, Harrisburg
2001-2005: Adjunct Assistant Professor of Environmental Engineering, Penn State University, Harrisburg
1995-present: Registered Professional Geologist in Pennsylvania PG-002255-G

Awards and Recognition

International Association of GeoChemistry (IAGC) "Excellence in Review" Award, 2023
The Society for Organic Petrology Dalaway J. Swain Award "Best Refereed Paper", 2016
Department of Interior Partners in Conservation Award (AMDTreat Development Team), 2013
Top 50 Most-Cited Papers in "Applied Geochemistry" (2006-2011)
Department of Interior Superior Service Award, 2005
Schuylkill County Conservation Professional of the Year Award, 2003
Pennsylvania Department of Environmental Protection Award for Excellence, 1999

Selected Publications (orcid 0000-0003-3116-4684); students identified by *

1. Cravotta, C.A. III, Tasker, T.L., Smyntek, P.M., Blomquist, J., Clune, J.W., Zhang, Q., Schmadel, N., and Schmer, N.K. (2024) Legacy sediment as a potential source of orthophosphate: Preliminary conceptual and geochemical models for the Susquehanna River, Chesapeake Bay Watershed, USA: Science of the Total Environment 912, 169361.
2. Hedin, B.C.,* Stuckman, M.Y., Cravotta, C.A. III, Lopano, C.L., Capo, R.C. (2024) Determination and prediction of micro scale rare earth element geochemical associations in mine drainage treatment wastes. Chemosphere 346, 140475.
3. Cravotta, C.A. III (2022) Interactive PHREEQ-N-AMDTreat+REYs water-quality modeling tools to evaluate potential attenuation of rare-earth elements and associated dissolved constituents by aqueous-solid equilibrium processes (software download): U.S. Geological Survey Software Release.
4. Spellman, C.J. Jr.,* Smyntek, P.M., Cravotta, C.A. III, Tasker, T.L., Strosnider, W.H.J. (2022) Pollutant co-attenuation via in-stream interactions between mine drainage and municipal wastewater: Water Research 214, 118173.
5. Smyntek, P., Lamagna, N.,* Cravotta, C.A. III, Strosnider, W.H.J. (2022) Mine drainage precipitates attenuate and conceal wastewater-derived phosphate pollution in stream water: Science of the Total Environment 815, 152672.

6. Cravotta, C.A. III, Senior, L.A., Conlon, M.D. (2022) Factors affecting groundwater quality used for domestic supply in Marcellus Shale region of north-central and north-east Pennsylvania, USA: Applied Geochemistry 137, 105149.
7. Cravotta, C.A. III (2021) Interactive PHREEQ-N-Titration-PO4-Adsorption water-quality modeling tools to evaluate potential attenuation of phosphate and associated dissolved constituents by aqueous-solid equilibrium processes (software download): U.S. Geological Survey Software Release
8. Lindsey, B.D., Cravotta, C.A. III, Szabo, Z., Belitz, K., Stackelberg, P.E. (2021) Relation between road-salt application and increasing radium concentrations in a low-pH aquifer, southern New Jersey: ES&T Water 1, 2541-2547.
9. Lindsey, B.L, Belitz, K., Cravotta, C.A. III, Toccalino, P.L., Dubrovsky, N.M. (2021) Lithium in groundwater used for drinking-water supply in the United States: Science of the Total Environment 767, 144691.
10. Cravotta, C.A. III (2021) Interactive PHREEQ-N-AMDTreat water-quality modeling tools to evaluate performance and design of treatment systems for acid mine drainage: Applied Geochemistry 126, 10845.
11. Szabo, Z., Stackelberg, P.E., Cravotta, C.A. III (2020) Occurrence and geochemistry of lead-210 and polonium-210 radionuclides in public drinking water supplies from principal aquifers of the United States: Environmental Science & Technology 54, 7236–7249.
12. Castillo-Meza, L.E.,* Cravotta, C.A. III, Tasker, T.L.,* Warner, N.R., Daniels, W.L., Orndorff, Z.W., Bergstresser, T., Douglass, A., Kimble, G., Streczywilk, J., Barton, C., Fulton, S., Thompson A., Burgos, W.D. (2020) Batch extraction method to estimate total dissolved solids (TDS) release from coal refuse and overburden: Applied Geochemistry 115, 104540.
13. Burté, L.,* Cravotta, C.A. III, Bethencourt, L.,* Farasin, J., Pédrot, M., Dufrense, A.,* Gérard, M.-F., Baranger, C.C., Le Borgne, T., Aquilina, L. (2019) Kinetic study on clogging of a geothermal pumping well triggered by mixing-induced biogeochemical reactions: Environmental Science & Technology 53, 5848-5857.
14. McDevitt, B.,* McLaughlin, M.,* Cravotta, C.A. III, Ajemigbitsea, M.A.,* Van Sice, K.J.,* Blotevogel, J., Borch, T., Warner, N.R. (2019) Emerging investigator series: radium accumulation in carbonate river sediments at oil and gas produced water discharges: implications for beneficial use as disposal management: Environmental Science: Processes & Impacts 21, 324-338.
15. Brown, C. J., Barlow, J.R.B. , Cravotta, C.A. III, Lindsey, B.D. (2019) Factors affecting the occurrence of lead and manganese in untreated drinking water from Atlantic and Gulf Coastal Plain aquifers, eastern United States—Dissolved oxygen and pH framework for evaluating risk of elevated concentrations: Applied Geochemistry, v. 101, p. 88-102.
16. Van Sice, K.,* Cravotta, C.A. III, McDevitt, B.,* Tasker, T.,* Landis, J.,* Puhr, J.,* and Warner, N. (2018) Radium attenuation and mobilization in stream sediments following oil and gas wastewater disposal in western Pennsylvania: Applied Geochemistry 98, 393-403.
17. Burrows, J.E.,* Cravotta, C.A. III, Peters, S.C. (2017) Enhanced Al and Zn removal from coal-mine drainage during rapid oxidation and precipitation of Fe oxides at near-neutral pH: Applied Geochemistry 78, 194-210.
18. Zhou, J.,* Wang, H., Cravotta, C.A. III, Dong, Q., Xiang, X. (2017) Dissolution of fluorapatite by *Pseudomonas fluorescens* P35 resulting in fluorine release: Geomicrobiology Journal 34, 421-433.
19. Burrows, J.E.,* Peters, S.C., Cravotta C.A. III (2015) Temporal geochemical variations in above- and below-drainage coal mine discharge: Applied Geochemistry 62, 84-95.
20. Cravotta, C.A. III, Means, B., Arthur, W., McKenzie, R., Parkhurst, D.L. (2015) AMDTreat 5.0+ with PHREEQC titration module to compute caustic chemical quantity, effluent quality, sludge volume: Mine Water and the Environment 34, 136-152.
21. Cravotta, C.A. III (2015) Monitoring, field experiments, geochemical modeling of Fe(II) oxidation kinetics in a stream dominated by net-alkaline coal-mine drainage, Pennsylvania, U.S.A.: Applied Geochemistry 62, 96-107.
22. Cravotta, C.A. III, Brady, K.B.C. (2015) Priority pollutants and associated constituents in untreated and treated discharges from coal mines in Pennsylvania, U.S.A.: Applied Geochemistry 62, 108-130.

23. Cravotta, C.A. III, Goode, D.J., Bartles, M.D., Risser, D.W., Galeone, D.G. (2014) Surface-water and groundwater interactions in an extensively mined watershed, Upper Schuylkill River, Pennsylvania, USA: Hydrological Processes 28, 3574–3601.
24. Geroni, J.N.,* Cravotta, C.A. III, Sapsford, D.J. (2012) Evolution of the chemistry of Fe bearing waters during CO_2 degassing: Applied Geochemistry 27, 2335-2347.
25. Cravotta, C.A. III (2008) Dissolved metals and associated constituents in abandoned coal-mine discharges, Pennsylvania, USA: 1. Constituent concentrations and correlations: Applied Geochemistry 23, 166-202.
26. Cravotta, C.A. III (2008) Dissolved metals and associated constituents in abandoned coal-mine discharges, Pennsylvania, USA: 2. Geochemical controls on constituent concentrations: Applied Geochemistry 23, 203-226.
27. Cravotta, C.A. III, Ward, S.J., Hammarstrom, J.M. (2008) Downflow limestone beds for treatment of net-acidic, oxic, iron-laden drainage from a flooded anthracite mine, Pennsylvania, USA--Laboratory evaluation: Mine Water and the Environment 27, 86-99.
28. Cravotta, C.A. III (2007) Passive aerobic treatment of net-alkaline, iron-laden drainage from a flooded underground anthracite mine, Pennsylvania, USA: Mine Water and the Environment 26, 128-149.
29. Cravotta, C.A. III (2003) Size and performance of anoxic limestone drains to neutralize acidic mine drainage: Journal of Environmental Quality 32, 1277-1289.
30. Cravotta, C.A. III, Trahan, M.K.* (1999) Limestone drains to increase pH and remove dissolved metals from acidic mine drainage: Applied Geochemistry 14, 581-606.

Graduate Student Research Committees and Guidance

- Penn State University: Weixing Guo, Ph.D. 1993 (R.R. Parizek, advisor); Christopher Abate, Ph.D. 1993 (R.R. Parizek, advisor); Derek R. Evans, M.S. 1994 (A.W. Rose, advisor); Kevin Wilson, M.S. 1995 (R.R. Parizek, advisor); Caroline Loop, Ph.D. 2003 (W.B. White, advisor); Lisa Forney, M.E.P.C. 2003 (Samuel McClintock, advisor); Paul DeAngelo, M.S. 2005 (Yeufeng Xie, advisor); Katherine Van Sice, M.S. 2018 (Nathaniel Warner, advisor), Luis Castillo Meza, Ph.D. 2018 (William Burgos, advisor), Bonnie McDevitt, Ph.D., 2020 (Nathaniel Warner, advisor), and Nicole Lane, Ph.D., *in progress* (Nathaniel Warner, advisor).
- University of Pittsburgh: Candace Kairies, Ph.D. 2001 (Rosemary Capo, advisor), Benjamin Hedin, Ph.D. 2021 (Rosemary Capo, advisor), and Camille Schaffer, Ph.D., *in progress* (Rosemary Capo, advisor). .
- Ohio State University: David J. Williams, M.S. 1999 (J.M. Bigham, advisor) and Wendy Gagliano, M.S. 2001 (J.M. Bigham, advisor).
- West Virginia University: Matthew Daly, M.S. 1998 (Joseph Donovan, advisor) and Michael J. Smilley, Ph.D. 2009 (Dorothy Vesper, advisor).
- Lehigh University: Jill Burrows Henry, Ph.D. 2015 (Stephen Peters, advisor).
- Bucknell University: Amy MacAusland, M.S., 2006 (Matthew McTamany, advisor).
- Shippensburg University: Dana Heston, M.S. 2015 (Thomas Feeney, advisor).
- Villanova University: Nicole Marks, M.S., 2020 (Steven Goldsmith, advisor) and Marissa Rossi, M.S., 2022 (Steven Goldsmith, advisor).
- Towson University: Mary Rogers, M.S., 2020 (Amy Williams, advisor).
- China University of Geosciences: Deng Liu, Ph.D. 2013 (Hongmei Wang, advisor), Linfeng Gong, Ph.D. 2013 (Hongmei Wang, advisor), and Jianping Zhou, Ph.D. 2017 (Hongmei Wang, advisor).
- University of New South Wales, Australia: Rosalind Desmier Greene, Ph.D., 2004 (David Waite, advisor).
- La Trobe University, Victoria, Australia: Sylvana Santomartino, Ph.D., 2005 (John Webb, advisor), Danny McDonald, Ph.D., 2006 (John Webb, advisor), Farah Ali, Ph.D., *in progress* (John Webb, advisor), and Josh Watson, M.S., *in progress* (John Webb, advisor).
- Cardiff University, UK: Jennifer Geroni, Ph.D. 2012 (Devin Sapsford, advisor).
- Luleå University of Technology, Sweden: Peter Nason, Ph.D. 2013 (Lena Alakangas, advisor) and Lucile Villain, Ph.D. 2014 (Lena Alakangas, advisor).
- University of Ottawa, Canada: Elizabeth Ashby, M.S. 2017 (Danielle Fortin, advisor).
- Université de Rennes 1, France: Luc Burté, Ph.D. 2018 (Julien Farasin, advisor).

Brent Means

Geochemist

Mr. Means is an accomplished Geochemist with extensive experience at the Office of Surface Mining Reclamation & Enforcement, demonstrating expertise in treatment plant design and mine pool management. He is skilled in designing and implementing mine water treatment projects. He has developed numerous innovative treatment strategies throughout his career.

Years of Experience

25 Years

Education

Bachelors, Geology, University of Pittsburgh, Johnstown, PA, 1996

Masters, Hydrogeology, Wright State University, OH, 1999

Registrations

Professional Geologist (PG)

Selected Project Experience

Little Conemaugh Mine Pool Management and Treatment Project Development, Pennsylvania Department of Environmental Protection, Ebensburg, PA, From 05-2023 To 07-2024

Author of report and conceptual design for a 12,000-gpm AML treatment plant to address three large discharges from a large mine pool complex. Mr. Means developed a conceptual model of the mine pool hydrology, statistically characterized the flow and geochemistry. He developed locations for withdrawal wells and sludge injection and sized reactors and clarifiers.

AMDTreat Software Development, Office of Surface Mining Reclamation and Enforcement, Pittsburgh, PA, From 07/1999 To 03/2025

Served as the lead author and technical developer of the Office of Surface Mining Reclamation and Enforcement's AMDTreat mine water treatment software.

Project Manager of Corsa Coal Treatment Sites, PA Department of Environmental Protection, Somerset, Pa, From 03/2025 To Current

Serves as the technical lead and project manager for PA DEP to operate and rehabilitate twenty treatment systems from the bankrupt Corsa Coal Company. Responsible for achieving effluent standards.

Mine Drainage Treatment Technical Assistance, Pennsylvania Department of Environmental Protection, Ebensburg, PA, From 07/21999 to 03/2025 To

Provided technical assistance on mine pool management, treatment system design, and treatment plant operation. Converted several treatment plants from hydrated lime to hydrogen peroxide to reduce costs and improve effluent quality. Conducted numerous mine pool characterizations and developed mine pool management plants. Served as a technical lead on treatment plant design and developed an innovated method to operate clarifiers.

Publications

Lead Author, Analysis of Hydrated Lime Consumption in Circumneutral Underground Coal Mine Drainage, Water and the Environment, 2015, Vol. 34. No. 1.

Seminars & Training

Lead Instructor, Software Training, Geochemist Workbench software, International Mine Water Conference, 2024

Lead Instructor, AMDTreat software, 2003 to 2025 Office of Surface Mining Training program