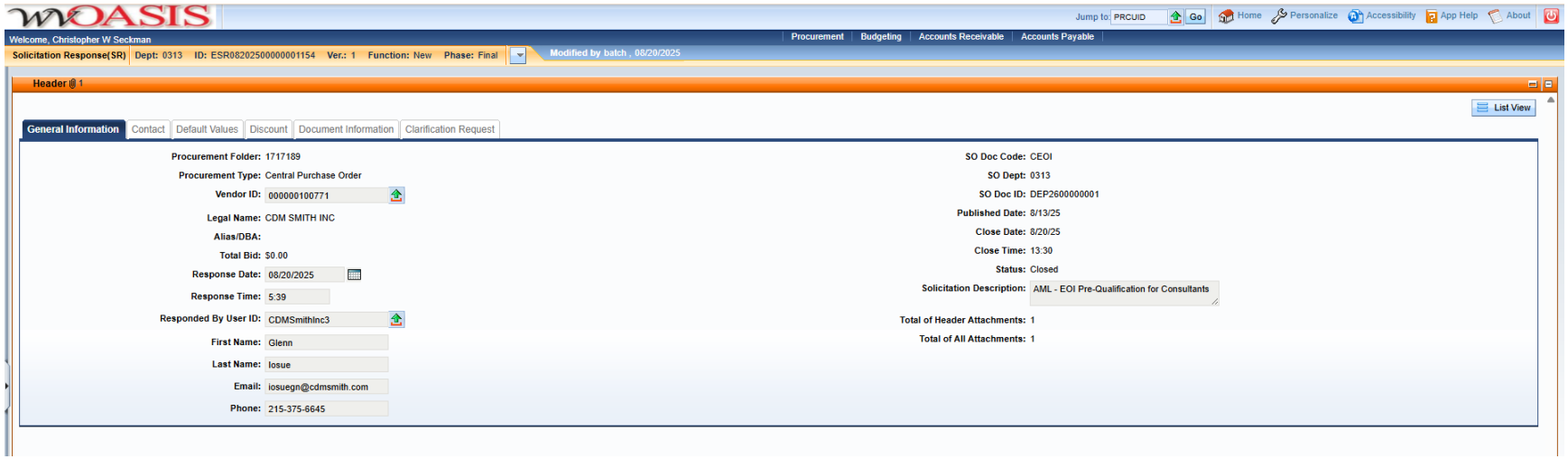
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.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About
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Procurement
Budgeting
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Solicitation Response(SR) Dept: 0313 ID: ESR08202500000001154 Ver.: 1 Function: New Phase: Final
Modified by batch , 08/20/2025
Header 1
List View
General Information
Contact
Default Values
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Document Information
Clarification Request
Procurement Folder: 1717189
Procurement Type: Central Purchase Order
Vendor ID: 000000100771
Legal Name: CDM SMITH INC
Alias/DBA:
Total Bid: $0.00
Response Date: 08/20/2025
Response Time: 5:39
Responded By User ID: CDMSmithInc3
First Name: Glenn
Last Name: Iosue
Email: iosuegn@cdmsmith.com
Phone: 215-375-6645
SO Doc Code: CEOI
SO Dept: 0313
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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 ESR08202500000001154	1

VENDOR

000000100771
CDM SMITH INC

Solicitation Number: CEOI 0313 DEP2600000001

Total Bid: 0 **Response Date:** 2025-08-20 **Response Time:** 05:39:07

Comments:

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:

Extended Description:

EOI Engineering Design Services

Pre-Qualification for Consultants West Virginia Department of Environmental Protection, Division of Land Restoration, Office of Abandoned Mine Lands and Reclamation

Solicitation No. CEOI 0313 DEP2600000001

Expression of Interest **August 20, 2025**

CDM Smith

August 20, 2025

Joseph E. Hager III
Department of Administration
Purchasing Division
2019 Washington Street East
Charleston, WV 25305
(304) 558-2306
joseph.e.hageriii@wv.gov

Subject: AML - Expression of Interest, Pre-Qualification for Consultants
West Virginia Department of Environmental Protection, Division of Land Restoration, Office of Abandoned Mine Lands and Reclamation (WVDEP-DLR-AML)
Solicitation No. CEOI 0313 DEP2600000001

Dear Mr. Hager:

Mining is part of West Virginia. The industry has powered the state's growth, warmed its residents, fed its utilities, fueled its economy, and sparked the development of infrastructure, including railroads and bridges. However, safety issues, public health impacts, and environmental degradation has taken its toll from abandoned mine sites.

The Office of Abandoned Mine Lands & Reclamation (AML&R) of West Virginia has spent decades reclaiming and restoring abandoned mine lands (AML) and mine-impacted waters. That work continues today as the Office of AML&R seeks qualified firms to provide engineering design services on AML projects. CDM Smith has the experience, technical expertise, and depth of resources to help. We are eager to support your AML projects to improve safety, the environment and quality of life in West Virginia.

History of Service to West Virginia: CDM Smith has been providing engineering design services to West Virginia agencies from our local Charleston office since 1998. This has included, but is not limited to, developing cost-effective engineering design and construction services while managing a variety of projects in some of the world's toughest terrain. We have worked extensively with the West Virginia Department of Transportation on many projects. This includes projects on an extremely active on-call contract, as well as projects for the Department of Highways and Water Development Authority. Additionally, CDM Smith has performed restoration projects in West Virginia for over 20 years. This includes ongoing construction oversight of the restoration of impacted soil, groundwater, and surface water at the Hanlin-Allied-Olin Superfund Site in Moundsville, WV. Our commitment to making a difference in West Virginia spans more than 25 years, and we are just getting started.

Engineering Experts with Four Decades of AML Expertise: CDM Smith has been providing engineering solutions for 78 years. We have significant experience delivering reclamation and restoration projects. CDM Smith was one of the first firms to perform Superfund projects in the early 1980s. We have implemented reclamation services at legacy mine sites for more than 40 years. Our work has helped clients overcome a variety of challenges similar to those faced in West Virginia. We understand what this work entails and how to do it correctly.

Large Firm with Robust Resources to Support Many Projects Concurrently: With more than 6,900 professionals in 130 offices, CDM Smith has the people and resources to support thousands of projects each year. We routinely support many projects concurrently for clients. Our size and large presence allows us to staff up or down as needed to meet the requirements of each assignment. Our greatest presence is in the eastern United States with 2,500 professionals across the region, spanning all major disciplines, including mining, civil, structural, chemical, mechanical, electrical, hydraulic, transportation, and water resources engineers, as well as construction managers and inspectors. No matter the size of the project or number of projects required, CDM Smith has the resources necessary to help.

Successful Track Record Implementing AML Projects: CDM Smith has successfully implemented AML projects in several States. We have the knowledge, engineering expertise and capabilities to complete multiple AML projects while meeting your

needs. Our track record speaks for itself, with many of our projects leading to follow-on contracts for additional phases of work. Simply put, our AML experts deliver high-quality results, and we can help West Virginia.

Thank you for the opportunity to submit our Expression of Interest. Our team is excited about the opportunity to help and support the Office of AML&R on AML projects. We are prepared to start immediately. Should you have any questions or require further information, please contact me at (215) 375-6645 or IosueGN@cdmsmith.com.

Sincerely,

Glenn Nicholas Iosue, PE, BCEE
(WV PE #027307)
Client Service Leader
CDM Smith Inc.

Contents

Executive Summary

The Office of Abandoned Mine Lands & Reclamation (AML&R) of West Virginia is seeking qualified firms to provide engineering services on abandoned mine lands (AML) projects. CDM Smith has the experience, technical expertise, and depth of resources to help you. We are eager to support your success in implementing AML projects to reclaim mine sites. CDM Smith has a long history in restoring land and water resources to improve safety and the environment and to improve the quality of life in West Virginia.

Local Leadership to Guide Your Projects

AML projects will be overseen and managed by our local leaders who are also registered Professional Engineers in West Virginia. We have an extensive track record of successfully implementing major civil and environmental projects throughout West Virginia. Our Principal-in-Charge, **Kyle Hall, PE**, is an experienced client and contract manager and a former WV Department of Highways employee with decades of experience delivering projects in West Virginia. Project Managers **Richard Opem, PE, PMP** and **Timothy Smith, PE** are experienced managers in addressing impacted sites and enhancing the environment through reclamation and restoration of land and water resources in West Virginia. Their collective experience and local knowledge make them a highly qualified team to lead your AML projects.

Highly Capable AML Experts

CDM Smith's leading mining professionals will play key roles in the implementation of your AML projects, bringing lessons learned and successful strategies that will inform the work. Several of these professionals have collaborated on multiple AML projects, and are registered Professional Engineers in West Virginia. **Nicholas Anton, PE**, is one of CDM Smith's most experienced mining experts, specializing in groundwater, surface water, soil remediation, and in particular, the storage and treatment of mining influenced water, geochemistry of mine wastes, the remediation of mine waste materials associated with active and abandoned mines, and mine land reclamation. He has been involved in nearly all of CDM Smith's mining projects during the past two decades. Nick works closely with fellow team members **Winston Parker, PE**, **Greg Sanders, PE**, and **Trent Thomas, PE**, on AML projects, as well as **Dustin Klempel, PE**. Additionally, **Devin Wilson, PWS, CPESC, CESSWI, ENV SP** is an environmental scientist with AML experience, including recently completed AML projects in Ohio.

Successful Strategies from Four Decades Delivering Mining Solutions

For more than 40 years, government and industry has looked to CDM Smith for lasting and integrated technical services for reclamation and restoration of mine sites. We have prepared alternatives evaluations, streamlined field plans, and implemented designs and engineering for bidding and construction. We have also implemented reclamation construction by working directly with mining company crews, by procuring construction subcontractors, and by using our own internal construction capabilities to provide timely and cost-effective design-build projects when requested.

At the Formosa Mine Site in Oregon, CDM Smith investigated acid mine drainage-generating source materials and mine-impacted groundwater. We employed rapid geochemical characterization methods, evaluated site risks to geotechnical and geophysical conditions, and oversaw a non-time-critical removal action including adit opening.

Our services for mine sites span the entire project life cycle. This has included from initial assessment and investigations, through designs and engineering, and to construction activities related to reclamation and restoration. Our mining projects have involved reclamation of mine refuse piles; watershed assessments and stream and habitat restoration;

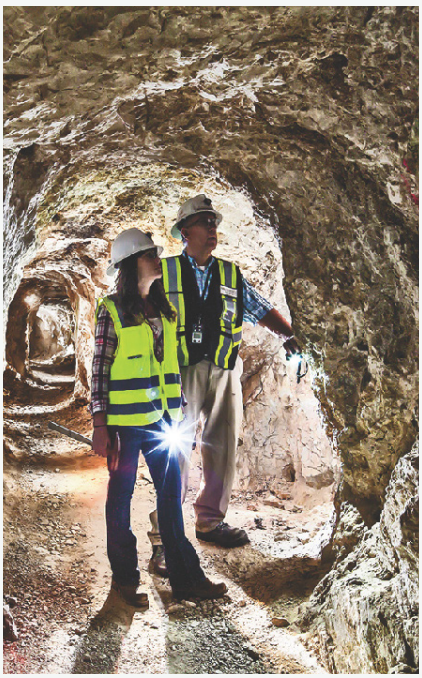
treatment of acid mine drainage; reclamation of mine portals; closures of open pits; drainage controls and systems; stabilization and restoration of slopes; subsidence repairs; stormwater and erosion and sediment controls; and all other conditions encountered on mine sites. Through our decades of diverse mining-related experience, we have developed successful strategies and approaches to a wide range of project types that we will deploy for the benefit of the Office of AML&R.

Robust Resources to Support Your Projects

CDM Smith has more than 6,900 professionals in over 130 offices. We have numerous offices throughout the region, including our local office in Charleston, WV with registered Professional Engineers in West Virginia and several construction staff. **We have hundreds of staff in West Virginia and nearby offices who are ready and able to support your AML projects.**

Our depth of resources includes registered professionals in major engineering disciplines, as well as support for regulatory permitting, stakeholder management, and more, This allows CDM Smith to bolster staffing when and where needed to make sure every project has the appropriate resources allocated at the right time to meet your critical schedule requirements. Our robust local, regional, and national resources mean that we have the infrastructure in place to respond to any task required by your office on this assignment.

At the Gilt Edge Mine Site in South Dakota, CDM Smith conducted geochemical modeling to evaluate alternatives for addressing acid mine drainage. We designed, constructed, and operated a water treatment system that treated up to 160 million gallons annually.



Project Management Approach

Overview

Effective project management is achieved through clear communication, defined processes, and coordinated team efforts to meet your needs efficiently, including completing projects on time and meeting key deadlines. This document outlines CDM Smith's approach to managing AML projects contracts with a focus on collaboration, quality control, and budget oversight.

- **Defined scope and task management:** Tasks begin with a review of the draft scope and development of a work breakdown structure, fee, and schedule, ensuring alignment with client needs and resource identification.
- **Early team involvement:** Engaging technical staff early fosters understanding of project objectives, ownership of scope and budget, and builds a strong team foundation.
- **Experienced technical resources:** A pool of skilled professionals enables tailored project sizing and cost-effective execution across varied engineering tasks.
- **Efficient communication strategy:** Direct communication between WVDEP staff, project management, and the Project Manager ensures coordination, single points of contact, and timely updates.
- **Life cycle cost analysis:** CDM Smith incorporates long-term maintenance and capital cost considerations to recommend cost-effective project alternatives.
- **Coordination and communication plan:** Frequent, open communication via meetings, calls, or video conferences supports timely work execution and issue resolution.
- **Robust quality control:** The Quality Management System includes the red-yellow-green checking procedure for deliverables and review by a Technical Review Committee focusing on process viability and project goals.
- **Document control system:** Use of Bentley Systems ProjectWise ensures organized access to project documents, standardized folder structures, and file naming conventions.
- **Cost control and budgeting:** Project managers align team roles and budgets, monitor time reporting weekly, and provide monthly progress reports detailing task status, budget metrics, and mitigation plans.

Technical Approach

The key to a successful performance is to have a well-defined process that allows WVDEP and CDM Smith to quickly agree on the scope, schedule, and budget of any assigned task. The following presents our team's approach to effective contract or task order management.

The CDM Smith team will manage tasks in a manner that maximizes communication efficiency with WVDEP and confirms that our work effort focuses precisely on your needs. The flow chart shown in the figure above demonstrates our proposed approach to managing services for WVDEP. This approach has been developed through experience, successfully providing these services to numerous clients across the United States, including the State of West Virginia.

Following a request to prepare a cost proposal for a specific assignment, our Project Managers will immediately review the draft scope with Principal-in-Charge Kyle Hall, PE. Together, they will prepare comments on the draft scope and develop a work breakdown structure (WBS), fee, and schedule for presentation to WVDEP. If necessary, CDM Smith will confer with WVDEP to refine the scope and proposed budget. In addition, our Project Managers will identify all applicable technical resources and support staff that will be required to successfully complete the assigned task.

Upon project award, our Project Managers will manage subcontract arrangements and convene the technical team to familiarize them with the work requirements and assign project responsibilities. From experience, CDM Smith knows that involving staff early in the project is important because it results in:

- Understanding the intent of the work tasks and the objectives of WVDEP's Office of AMR&L
- Creating a sense of project "ownership" of the scope and budget of work tasks
- Building the foundations for a strong and effective team

Staff participating in the planning and processing of work tasks is one of the critical success factors in completing work on time and within budget. CDM Smith has assembled a pool of experienced technical resources who will be able to tackle the range of engineering and consulting tasks that could be envisioned in this contract. They understand the technical requirements of the work and how to perform efficiently and effectively on a wide range of technical tasks. Having this pool of experienced technical resources available is the key reason that we can "right-size" individual projects and successfully perform them in a cost-effective manner.

In order to maintain efficient communication while performing all tasks, WVDEP staff, the CDM Smith project management team, and our Project Managers will directly communicate on all project issues. The goal is to maximize the efficiency of project communication and coordination while maintaining a single point of contact for all tasks. This communications management approach has proven to be effective in other on-call contracts and for ongoing on-call assignments with WVDEP.

Our team of technical resources will maintain internal communication regarding the status of the various specific tasks so we can respond to information requests from, and provide regular status updates to, WVDEP. Kyle Hall, PE, is our Principal-in-Charge and an experienced CDM Smith officer. He will apply his experience with this approach to provide for efficient project execution and overall contract management. He has the authority to allocate resources within the firm and will make sure our Project Managers have the required staff at their disposal to implement WVDEP's AML projects.

CDM Smith has developed life cycle cost analyses in conformance with WVDEP's procedures for new projects and alternative rehabilitation methods to confirm that the recommended alternative in preliminary or final design is the most cost-effective and constructible replacement or rehabilitation approach. Having worked for the State of West Virginia for nearly 30 years, CDM Smith fully understands the importance of considering long-term maintenance issues and costs, in addition to capital costs.

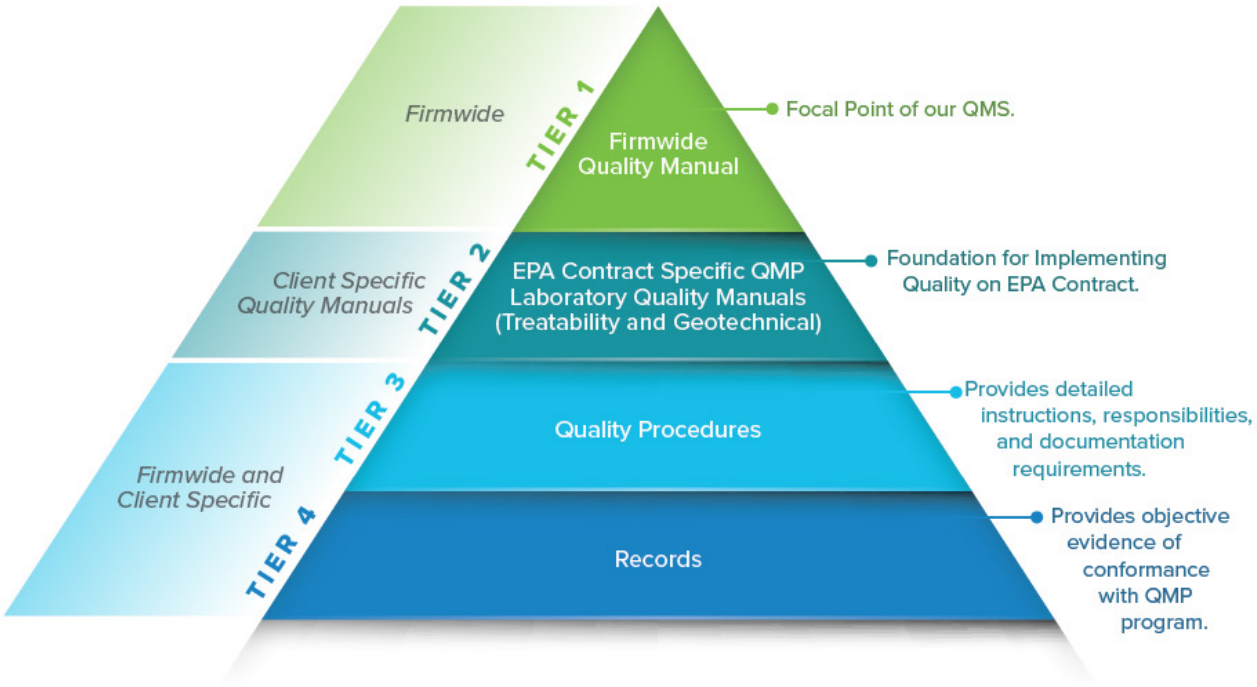
Coordination and Communication Plan

The success of CDM Smith's projects is rooted in frequent, open communication and close coordination among project management, the client and key stakeholders. While in-person meetings are often beneficial, sometimes meetings by phone or video conference are just as effective or may be preferred. Our project management team is comfortable with all of these methods. Our project managers will be responsible for coordinating and communicating with you about AML projects.

Our project managers and task managers will communicate with you as needed to maintain efficient, timely execution of the work, as well as for prompt resolution of any issues that arise. Depending on the assignment, the communication may include regular meetings to exchange information and review progress on individual assignments, design review meetings, site visits, and meetings with WVDEP's Project Manager to review contractual, financial, and schedule issues for the overall contract. Throughout this process, CDM Smith personnel will be available as needed to support you and we commit to a high level of communication and support if selected for this important contract.

Quality Control Plan

CDM Smith has a long history of providing robust quality control on all manner of projects and will implement our industry-exceeding standards for quality on this project. Our Quality Management System (QMS) has been used successfully on many current and past mining projects and conforms to ISO 9001 requirements and includes policies, processes, and procedures that guide all of CDM Smith's work throughout the project lifecycle, including quality control of project deliverables. The QMS consists of tiers, each supported by the next tier.



A cornerstone quality procedure for project deliverables is the checking procedure known as the red-yellow-green (RYG) check, which is implemented by the project team in conjunction with task leads. The RYG process requires task leads to cross-check each draft deliverable and mark edits in red. The red comments are then incorporated by the team and marked in yellow. The task lead then back-checks the updated deliverable against the yellow markups, and when the task lead is satisfied that the review comment has been properly incorporated, the yellow markups are circled in green. The complete RYG markups are saved in project files for documentation purposes. RYG reviews are performed on all main deliverables.

The other cornerstone quality procedure for CDM Smith projects is performed by the Technical Review Committee (TRC). While the RYG procedure is focused primarily (but not exclusively) on checking for conflicts and other consistency issues, the TRC focuses primarily on bigger picture issues such as the viability or appropriateness of a particular process alternative, life cycle costs, and whether the approach most effectively accomplishes the project's goals.

The TRC is made up of senior professionals within the engineering and scientific disciplines required by the project. The project manager coordinates with the TRC to confirm that the TRC is fully aware of the client's goals and critical success factors for the project. However, the TRC members are not involved in the day-to-day project execution and is not vested in the solutions developed by the project team. TRC comments are addressed and formally documented before the submission of the final deliverable.

Our internal document control will be centered around the use of Bentley Systems ProjectWise collaboration and content management software, developed specifically for engineering projects. ProjectWise will be used to make the latest project documents accessible to team members. CDM Smith has adopted a standardized folder structure within ProjectWise that separates "working files" and deliverables, so that the team updates the latest versions of deliverables and reports, while a record of milestones is maintained. The Document Control Plan will also standardize file naming.

Cost Control and Budgeting

With a diverse team on the project, cost control will start with aligning our internal team members with the project objectives, and their roles and assigned hours on the project. Early in the project, the project manager will host an internal project team meeting to review the project, success factors, schedule, and budget allocated to each team member for each task. Every team member will be required to review the Project Management Plan (PMP).

The project will be set up within CDM Smith's internal time reporting system with specific project controls so that only those staff directly involved in the project will be able to charge time to the project. Staff not originally allocated to the project will need approval from the CDM Smith project manager to be added to the list of staff able to charge time. Start and finish dates will also be added to each project phase and to individual tasks, aligned with the project baseline schedule, to limit the amount of time and associated costs that can be booked.

The project manager will review the time spent against project tasks on a weekly basis, address any issues, and work with the team to implement mitigation approaches to address any budget issues without affecting the quality and value of deliverables.

At the end of each month, CDM Smith will prepare a progress report and report on the project performance. The monthly progress report will include:

- Project and task status summary/progress.
- Project/task/cost/budget remaining and earned value (EV) metrics by individual task and for the entire project.
- Estimated effort to complete, changes from original scope.
- Cost and schedule variance analysis, and planned mitigation measures to minimize impacts to the project budget and schedule, if required.

A Comprehensive Safety Program

CDM Smith's health and safety program is based on the principles that people are our greatest asset, accidents and injuries are preventable, and everyone is responsible for safety. Because of this approach, CDM Smith's safety performance record significantly outshines the industry averages, with a current (2025) Experience Modification Rate (EMR) of 0.65 – well below the industry average of 1.0.

CDM Smith fosters a culture of safety in the office, in the field, and on construction sites, and we will prepare a comprehensive Safety Program. During construction, our team will constantly monitor compliance and correct any deficiencies as needed. By following these steps, CDM Smith confirms that projects for WVDEP are executed in compliance with regulatory requirements, minimizing environmental impact, and ensuring public safety.

Qualifications and Relevant Experience

Introducing CDM Smith: 78 Years of Engineering Excellence

CDM Smith was founded in 1947 as a drinking water solutions firm that pioneered treatment technologies and advanced approaches in water quality protection and groundwater recharge. In the years that followed, we expanded our service offerings and our global footprint considerably. Today, 78 years later, we are still at the forefront of the water treatment arena. We are also a leading provider of innovative solutions in the mining, environment, transportation, energy, and facilities sectors. We work collaboratively—in teams and in partnerships with our clients—to provide engineering solutions to solve complex mining, environmental and infrastructure challenges. Together, we are committed to doing what is right for our clients, our communities, each other and the future.

What began as a three-person partnership is now a workforce of over 6,900 professionals who are dedicated to solving our clients' most challenging problems. Our accomplishments in engineering projects with States underscores that we continue to maintain the size, stability, and resources necessary to successfully develop and complete a diverse range of projects, drawing quickly upon the expertise of our entire staff.

A Long-Term History of Providing Engineering Services to West Virginia

CDM Smith and West Virginia's State agencies have worked together since 1998 developing cost-effective engineering design and construction, managing both major and minor projects, in some of the world's toughest terrain.

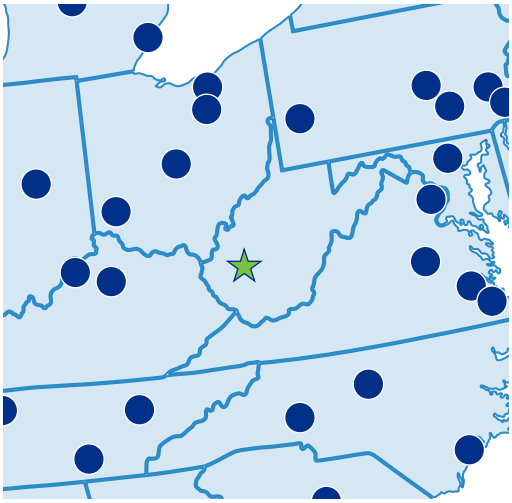
CDM Smith's West Virginia office is staffed with registered Professional Engineers and professionals experienced in civil and construction projects. In fact, a number of our construction staff have previously worked directly for West Virginia's State agencies, affording them the ability to identify potential challenges and quickly develop effective resolutions that avoid unnecessary delays and unanticipated costs.

In addition to transportation services, CDM Smith has provided restoration solutions in West Virginia since the early 2000s, including multiple Superfund projects related to impacted soil, groundwater, and surface water.

A Large Firm with Robust Resources to Serve AML Projects

CDM Smith has more than 6,900 professionals in over 130 offices. We have numerous offices throughout the region. This includes our local office in Charleston, WV, with registered Professional Engineers in West Virginia and several construction staff. **We have hundreds of staff in West Virginia and nearby offices who are ready and able to support your AML projects.** Some of our nearby offices with staff to support AML projects include Columbus and Cincinnati, OH; Pittsburgh and Philadelphia, PA; Fairfax, Richmond, and Newport News, VA; Lexington and Louisville, KY; and Raleigh, NC.

Our depth of resources includes licensed professionals in all major engineering disciplines, as well as support for regulatory interaction, stakeholder management, and more, allowing us to bolster staffing when and where needed to make sure every project has the appropriate resources allocated at the right time so we can meet your critical schedule requirements. Our robust local, regional, and national resources mean that we have the infrastructure in place to respond and help you on any task required on this assignment.



A Highly Experienced Firm that Meets WVDEP Requirements

Firm Overview

CDM Smith has a proven track record in reclamation project permitting, design, realty, and construction inspection. Our multidisciplinary team includes experts in mining, civil, geological, hydrological, structural, electrical, and environmental engineering, as well as surveying and realty services. We are committed to delivering full-service engineering planning, realty, design, and construction oversight with minimal supervision, in alignment with your expectations.

Compliance Commitment

We affirm full compliance with the Infrastructure Investment and Jobs Act (IIJA), including:

- ✓ Davis-Bacon Act
- ✓ Build America, Buy America (BABA)
- ✓ All applicable Federal, State, and Local laws

Project Management Approach

Our internal systems ensure timely performance through:

- ✓ Detailed project scheduling and tracking
- ✓ Regular progress updates
- ✓ Risk identification and mitigation strategies
- ✓ Effective coordination with WVDEP staff, subcontractors, and permitting authorities

We understand the time-sensitive nature and urgency of AML reclamation projects and have developed a robust plan to meet all deadlines. We have a proven record of meeting deadlines under complex conditions. tough terrain and limited-season projects.

Our Capabilities

Planning

- ✓ Consultations, investigations, reporting, applications that may include, but are not limited to: National Environmental Policy Act (NEPA), West Virginia Division of Natural Resources (WVDNR), West Virginia Historic Preservation Office (SHPO), WV Regional Planning, US Forest Service, US Fish and Wildlife Service
- ✓ Bat studies, endangered species analysis
- ✓ Water quality sampling and data analysis

Realty

- ✓ Courthouse research to determine legal property ownership and documenting findings
- ✓ Supporting the acquisition of Exploratory Rights of Entry (EROE) and Construction Rights of Entry (CROE) from landowners
- ✓ Landowner coordination including keeping logs, as well as collecting and reporting data
- ✓ Boundary surveys as needed
- ✓ Support to obtain the Rights of Entry, which include CDM Smith, WVDEP and the Office of Surface Mining Reclamation & Enforcement (OSMRE), before starting fieldwork the rights of entry

Design

- ✓ Engineering across all required disciplines including, but not limited to, mining, civil, geological, hydrological, survey (mapping), process, structural, electrical, etc.
- ✓ Engineering and surveys will include current mapping and other related services to successfully engineer and design a permanent solution to fully address issues and problems for each AML project
- ✓ Designs will incorporate site and geotechnical investigations, ensure the elimination and mitigation of risks to the public and private individuals, and prevent the introduction of new hazards
- ✓ WV Registered Professional Engineers will stamp designs and WV Registered Professional Surveyors will stamp survey deliverables
- ✓ AML designs will include, but are not limited to, NPDES construction stormwater General Permit registrations, WVDOH MM-109 encroachment permits, USACE consultations, Health Department permits for water lines (if required), and applicable county and floodplain permits
- ✓ Designs may involve developing plans and technical specifications for mine portal reclamation, drainage systems, slope stabilization, coal refuse management, channel restoration, subsidence repair, construction and maintenance access, stormwater and erosion control, regrading, revegetation, water treatment, and other AML project remediation needs based on site-specific conditions encountered.
- ✓ CDM Smith will support and obtain required permits on behalf of WVDEP.

Construction Oversight

- ✓ Daily inspections and documentation during construction, through warranty period and final release
- ✓ Engineering oversight and support including review of contractor as-builts
- ✓ Final Engineer's Certification Report
- ✓ CDM Smith understands the time sensitive nature of AML reclamation projects, and our Project Management approach and plan to meet your deadlines throughout the project lifecycle is discussed herein

Personnel and Resources

- ✓ We maintain a team of qualified professionals with availability to support overlapping or expedited deadlines. Our staffing plans ensure coverage across all required disciplines, including access to subconsultants for specialized services.

Past Performance

We have successfully completed numerous AML and similar projects, meeting key deadlines and project goals. A few representative projects are provided herein.

CDM Smith Provides Civil Engineering and Construction Services to West Virginia

West Virginia has counted on CDM Smith to design and provide construction oversight of many heavy civil engineering and construction projects. We are actively implementing several projects and have recently completed many more, involving engineering design, construction management, and planning services. Through this experience we understand the requirements that must be met and the challenging terrain that must be overcome to successfully deliver projects in West Virginia.

King Coal Highway – Preliminary Investigation & Engineering Study Contract Plans
The King Coal Highway corridor, developed by the West Virginia Department of Highways (WVDOH), aims to provide an east-west expressway through southern West Virginia and will eventually be part of the future Interstate 73/74 Corridor. CDM Smith conducted a Public Interest Exclusion (PIE) study, an interchange location study, and developed construction and right-of-way plans for the project, which was divided into eight construction contracts to align with funding availability. The King Coal Highway Plans Update enhanced geotechnical stability, ensured compliance with current engineering standards, and reinforced the highway's foundations.

I-79 Bridge Replacements, District 4
CDM Smith was selected WVDOH in early 2023 to provide construction engineering and inspection services on the I-79 Bridge Replacements contract— a major contract that was awarded to Triton Construction for $45,563,870. The project involves three separate bridges spanning major metropolitan areas of Fairmont and Morgantown in Marion and Monongalia Counties.

I-70 Bridges CEI Services, District 6
CDM Smith provided construction engineering and inspection services for the $215 million I-70 Bridges project in Ohio County, which involved the rehabilitation and replacement of 26 bridges. Our services included project management, inspection, documentation, issue resolution, claim analysis, inspection supervision, schedule monitoring, estimates, constructability reviews, RFI responses, change orders, SiteManager, and administration and progress meetings.

Beckley Widening Inspection Services
CDM Smith provided construction engineering and inspection services for nearly 8 miles of the I-64/ I-77 widening project in Raleigh County to alleviate congestion and improve safety. This $121.7 million project was the first General Obligation Roads to Prosperity project awarded by WVDOH. The CDM Smith team provided on-site project management/supervision, inspection and documentation, quality control, and quality assurance. Construction included grade, drain, pave, structures, retaining wall, sign, lighting, and concrete repair.

We Bring Decades of Expertise Delivering Large Restoration Projects in West Virginia

CDM Smith is proud of our 40-plus-year history with large restoration projects. Our experience with impacts from mines is unrivaled. We have successfully collaborated with State agencies to deliver innovative technical solutions, with optimal results, on the most complex and challenging sites in the nation, including multiple sites in West Virginia.

Hanlin Allied Olin Superfund Site

CDM Smith is overseeing the restoration at the Hanlin Allied Olin Superfund Site in Moundsville, WV, to address impacts to soil and water. The primary goal of the project, which is managed by **Richard Opem**, is to restore impacted soil and water to protect human health and the environment. The project faces challenges such as complex geological conditions, and the need for effective long-term restoration strategies. CDM Smith is providing comprehensive services, including field investigations, construction oversight, analytical support, engineering and design submittal reviews, data management, and technical assistance, to achieve these goals.

CDM Smith is implementing a detailed and multi-faceted approach to address the impacts, including conducting field investigations to determine the extent of impacts; coordinating with Environmental Protection Agency (EPA) laboratories and subcontracted labs to perform the analyses and other testing; data management and evaluation; conceptual site model development; technical assistance and document review to confirm compliance with standards; and overseeing the design and implementation of restoration activities, including groundwater extraction and treatment systems.

Previous Projects

Fike Chemical Superfund Site
Nitro, WV
The Fike Chemical Superfund Site, a former chemical plant built over a World War I gunpowder factory, includes an 11.9-acre batch chemical production plant, a former sewage treatment plant, and several lagoons. CDM Smith reviewed a design for a cap in the sewage treatment plant area, developed a work plan for investigations, and provided construction oversight.

Hanlin Allied Olin Superfund Site
Moundsville, WV
CDM Smith oversaw the design and construction of an on-site disposal facility (OSDF) at the Hanlin Allied Area, a former manufacturing plant. The project involved disposing of process wastes in various on-site units, including lime ponds, acid neutralization ponds, and stabilized sludge areas. CDM Smith provided engineering design reviews and construction oversight, including the removal of waste management units and stockpiled material. This large restoration project continues today and is managed by our West Virginia office.

Vienna Superfund Site
Vienna, WV
CDM Smith provided engineering design and construction services for a Superfund Site in Vienna, WV. We designed and built an extraction system to remove and treat impacted water. After construction, CDM Smith operated the treatment system, regularly collected water samples, and reported the results to WVDEP.

Four Decades of Delivering Abandoned Mine Lands Solutions

For more than 40 years, government and industry have looked to CDM Smith for lasting and integrated technical services for reclamation of and restoration of mine sites. As a full-service engineering and construction firm, we deliver exceptional client service and quality results on mining sites.

Our services for mine sites span the entire project life cycle. This has included from initial assessment and investigations, through designs and engineering, and to construction activities related to reclamation and restoration. Our mining projects have involved:

- reclamation of mine spoil and coal reuse piles;
- watershed assessments and stream and habitat restoration;
- treatment of acid mine drainage;
- reclamation of mine portals;
- closures of open pits;
- drainage controls and systems;
- stabilization and restoration of slopes;
- subsidence repairs;
- stormwater and erosion and sediment controls;
- temporary and permanent access for construction and maintenance; and,
- all providing remedies and solutions for any additional AML site conditions encountered.

Through our decades of diverse mining-related experience, we have developed successful strategies and approaches to a wide range of project types that we will deploy for the benefit of your AML projects.

Our specialists also have expertise in watershed-wide restoration. For watersheds impacted by mining activities, CDM Smith has:

- Developed and implemented strategies to prioritize reclamation for hundreds of mining sites across an entire watershed
- Used a decision tree model to quickly put sites into categories and select alternatives
- Completed research and pilot tests associated with selecting, monitoring, and maintaining vegetative covers at mining sites
- Conducted treatability studies to minimize acid mine drainage potential and mining-influenced water treatment
- Developed engineering designs and provided construction oversight support for reclamation and restoration activities

Mining Reclamation Capabilities

CDM Smith has prepared reclamation alternatives evaluations, streamlined field and laboratory plans, and construction designs and bidding documents. We also have implemented reclamation construction by working directly with mining company crews, by procuring construction subcontractors, and by using our own internal construction capabilities to provide timely and cost-effective design-build projects when requested.

Some of the reclamation and restoration services we offer to meet the multi-objectives of AML projects include urban stream renaturalization, bioengineered bank stabilization, mined land reclamation, riparian habitat and wetland restoration, watershed and land use planning, community outreach and stakeholder facilitation, recreational planning and design and construction, as well as project funding. Additionally, CDM Smith has provided post-closure inspections and monitoring and our operations and maintenance personnel have provided fully licensed operations, planning, training, consulting and maintenance for operating passive and active treatment facilities. CDM Smith has also developed innovative approaches to mine closure, including reuse of existing facilities and use of passive water treatment processes to minimize closure and reclamation cost.

CDM Smith provides comprehensive or individual task-based mining services for projects ranging from individual sites to multi-disciplinary watershed-based cleanups. CDM Smith is not just an environmental firm that works on impacted mining active sites. We employ a wide range of staff that understand how active mine operations and milling practices directly affect future environmental restoration issues. This in-depth understanding of mining and processing procedures helps us better understand how mine processes impact the environment.

CDM Smith has been one of the leading civil/environmental design firms in the US for the last 78 years. Our culture and processes are based on our solid engineering background. We are typically ranked in the top 20 firms for environmental/hazardous, water, wastewater, and water resource design by *Engineering News Record (ENR)* annually. We have brought this solid engineering design culture to the delivery of design services for mine legacy sites. **CDM Smith mining projects have involved reclamation of waste piles; watershed assessments and stream and habitat restoration; treatment of acid mine drainage; closures of landfills, open pits, and adits; and beneficial reuse of contaminated property.** We have specialists with direct mining applications, civil infrastructure, and water resource engineering.

Large-Scale Mine Waste Reclamation Capabilities

CDM Smith is a leader in reclamation design of mine refuse piles, including tailings facilities at abandoned mine/milling sites. We have successfully supported mining companies in the reclamation of several large-scale legacy mine sites. Our approach to design includes evaluations of acid/base accounting and predictions, solidification/stabilization with treatment agents, geotechnical stability, capping using many natural soils to synthetic systems, revegetation, water diversion and other reclamation activities. In addition, CDM Smith has numerous experts in all aspects of tailings impoundments including safety, geotechnical properties, design and construction, and value engineering.

CDM Smith routinely performs hydrogeologic studies at inactive mine sites. CDM Smith has also performed many investigations at mining sites including an evaluation of surface water and water impacts and resources. Services typically include mine hydrogeology, as well as hydrologic testing and evaluation of potential reclamation and restoration options.

Quality Design Services

CDM Smith's vast engineering experience has allowed us to develop an efficient and streamlined process that results in high-quality designs that prospective bidders understand. This minimizes contingency costs that bidders will sometimes include to address areas of the design that are unclear or even wrong. Our high-quality designs allow the prospective bidders to fully understand the design intent, which minimizes the unknowns and associated risk for the contractors, allowing for a competitive and close bid price.

CDM Smith's in-house design capabilities include **mining, civil, geotechnical, environmental, structural, electrical, instrumentation, mechanical, architectural, site design/landscape architecture, HVAC, plumbing, fire protection, and cost estimating**, making use of a full-service engineering and architectural design firm. We provide comprehensive design services, including preparation of design drawings, technical specifications, cost estimates and the associated project management to ensure budgets are met.

Realty Services

CDM Smith has extensive experience in Realty Work in West Virginia and throughout the country. Our Realty Work touches many types of projects that we deliver, including AML, environmental, municipal infrastructure, transportation, disaster recovery, and lead service line replacement programs.

Many of our projects require extensive coordination with landowners to secure rights of entry for access, site investigation, property acquisitions, relocations, and infrastructure repairs, maintaining detailed logs of interactions with landowners in all cases. We have also secured special legislation when needed to work directly with renters, and often work closely with local authorities and stakeholders to ensure compliance with federal and State regulations and facilitate smooth execution of projects.

CDM Smith's Realty Work experience also includes boundary surveys and courthouse research to determine legal property ownership. We obtained copies of tax maps, assessment sheets, deeds, utility easements, and recorded lot plans, ensuring all information was documented and provided in digital format. This diligent documentation process includes obtaining prior deeds when descriptions were vague or lacking information.

Permitting

One of the key issues associated with abandoned mine land reclamation work is the ability to navigate a complex array of environmental permitting requirements. CDM Smith has a successful and proven track record of obtaining environmental, archaeological and utility permits for a wide range of engineering projects, including mine reclamation projects. Our engineers and planners have developed complex permit applications for a range of projects types and sizes, entailing federal, state, and local regulatory approvals. We keep abreast of regulatory changes on the local, state, and national level, and maintain close working relationships with the regulatory agencies to facilitate smooth approval processes. Our team's working relationship with the regulatory community will result in timely reviews by permit agencies and a reduced level of effort to reach the approval stage.

Services During Construction

CDM Smith offers a full range of construction services, including resident engineering and inspection, and has provided services during construction for virtually every one of our design projects. We make use of the hands-on knowledge of our skilled construction services staff to help produce design documents that are of high quality and are easily biddable. CDM Smith is highly experienced in the management of complex construction projects and we have applied our experience on current successful projects to minimize conflicts.

In addition to resident engineering, our construction services include all bid phase services (advertising, receiving, and awarding of bids); conducting pre-construction conferences and progress meetings; developing and administering a construction document control system; providing design clarifications; administration of change orders, claims and time extensions; shop drawing review; materials testing coordination; and start-up assistance and implementation. The continuity created when CDM Smith extends services from design through construction consistently results in lower change-order costs and higher client satisfaction.

Featured Projects: Representative Experience Performing Similar Projects

The following pages present detailed examples of our team's relevant project experience. Members of our proposed team have collaborated on these projects, so they truly represent the capabilities of the team that will support and help the Office of Abandoned Mine Lands & Reclamation of West Virginia.

The tasks on the projects including engineering design, investigation, realty, permitting, and construction oversight achieved their respective project goals and objectives. CDM Smith completed these projects on time and met key deadlines.

Silver Bow Creek/Butte Area Superfund Site

Butte, Montana

CDM Smith has supported reclamation and restoration activities at Silver Bow Creek/Butte Area site since 1985. The site encompasses mining and ore processing areas that over the past 100 years have resulted in more than 400 mines with associated mine waste dumps, 10,000 miles of underground mine workings flooded with metal-contaminated water, the mile-wide Berkley pit containing more than 47 billion gallons of contaminated water, and numerous tailing ponds and acid leach pads. CDM Smith has performed a broad range of services at the Silver Bow Creek/Butte Area site. Our services have encompassed planning, technical, and project management support for numerous areas at the site.

We are helping implement reclamation and restoration that comply with federal and state standards. To date, these actions have resulted in the removal of more than 2 million cubic yards of mine tailings and contaminated soil, and the reclamation of more than 450 acres within the City of Butte and in the floodplain at the head of Silver Bow Creek. These activities significantly reduced metal-loading to the creek and improved water quality, resulting in reestablishment of an aquatic ecosystem. In addition, the restoration activities significantly reduced human exposure to mine wastes and associated risks.

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For the Silver Bow Creek/Butte Area site we are the primary technical expert and provide technical support for all aspects of oversight. This has included:

- Coordinated with multiple federal and state agencies
- Engineering designs, monitoring documents, and construction completion reports for numerous activities
- Oversight of construction activities, including a new 10-million-gallon-per-day water treatment facility.

For the impacted soils to the West, CDM Smith is responsible for planning and conducting a investigation and study for the 6,000+-acre site that has been impacted by historic mining. We characterized source material (tailings piles, mine waste piles) and impacted soils from more than 500 mine claims on the site. The sampling effort included collection of over 4,000

Provided technical support for the water treatment adequacy review for the 7-8 million gallons per day Horseshoe Bend water treatment plant, waterfowl mitigation plans, slope stability, and other technical documents.

surface soil samples at mine areas and adjacent soils, 200 subsurface soil samples within mine dumps using a "direct-push drill rig", over 100 surface water samples in drainages near the mine areas, and 50 sediment samples in the drainages. The sampling occurred on range land, residential lots, and undeveloped mine claims. Soil samples were analyzed for paste pH and lithology, and a fraction using field-portable x-ray fluorescence (XRF), and laboratory analysis for metals, leaching potential, and acid base accounting. In addition, yards and groundwater wells from 30 residential properties were sampled.

The sampling work required significant coordination and tracking of over 100 property owners for access to the private parcels. Data from the sampling efforts are being used to characterize the impacts from the site and to evaluate human health and ecological risks from historical mining activities. Those assessments will provide relevant and up-to-date regulatory information, applicable criteria, and action limits that will be considered.

Red Lodge East Bench Coal Repository Reclamation Project

Red Lodge, Montana

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In June 2022, the greater Yellowstone ecosystem experienced severe flooding as unprecedented amounts of rain fell on melting snow, causing massive flooding along the Yellowstone River and its tributaries. One of the tributaries experiencing this 500-year flood was Rock Creek, which flows from its origins in the Beartooth mountains through the town of Red Lodge, MT. The flood caused widespread damage, washed away bridges, and eroded the East Bench Mine, a former underground coal mine which operated intermittently from 1887 to 1932. The flooding creek eroded into a coal repository which was constructed by the Montana AML program under a 1993 reclamation project, creating a steep, dangerous highwall with exposed coal adjacent to Red Lodge.

CDM Smith conducted hydrology and hydraulic modeling of Rock Creek to support streambank reclamation design and meet floodplain permitting requirements. We coordinated with FEMA and local floodplain authorities, duplicated of effective hydraulic models, and the developed post-flood and proposed conditions models. We produced a detailed Hydraulic Analysis Report outlining key findings to guide design decisions.

A geotechnical site investigation and stability assessment informed the structural and geotechnical aspects of high-wall and streambank stabilization. We created a geotechnical field investigation plan, oversaw fieldwork, and assessed site conditions for soil placement, equipment access, and material sourcing. We then prepared a comprehensive Geotechnical Report for DEQ.

CDM Smith developed design drawing and specifications for streambank and floodplain reclamation which included "soft armor" design of the stream bank, onsite soil salvage and coal slack repository reclamation, temporary access road and bridge plans, site/repository grading plans, and revegetation plans including incorporation of willow cuttings for the soft armored streambank. Design drawings, specifications, and bid packages were developed to perform construction in a phased approach, with Phase 1 consisting of emergency site stabilization measures followed by Phase 2 full site reclamation. Bid support, including response to prospective bidder Requests for Information, was also provided during the bidding process.

CDM Smith managed all aspects of reclamation construction activities, including project oversight, contractor coordination, and health and safety monitoring. A full-time resident project representative ensured construction adhered to design specifications and maintained detailed construction logs. An engineer of record also provided weekly on-site support. CDM Smith performed final topographic survey of the construction area and developed as-built drawings, conducted final inspections with DEQ to confirm project completion, and developed a comprehensive construction completion report.

Captain Jack Mine and Mill Superfund Site

Boulder County, Colorado

The Captain Jack Mill Superfund Site consists of group of abandoned gold and lead mines located near Ward, CO. CDM Smith provided support to the Colorado Department of Public Health and Environment (CDPHE) for site design and construction administration and management, which involved removal of contaminated mine tailings, mine waste, and soil materials and consolidation into two on-site repositories with vegetated covers. Design included pre-design investigation (PDI) data collection and assessment; demolition of historic mine facilities, development of fill and growth media from suitable onsite soil resources; and various site restoration activities such as regrading, run-on/run-off controls, placement of growth media and hydroseed, riprap placement, and creek rehabilitation. The PDI included sampling activities and site geology and geotechnical engineer data memorandum summarizing the data collected.

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CDM Smith prepared basis of design report and developed construction bid package including contract drawings, specifications, and remedial action design package; CDM Smith supported CDPHE during bidding activities. Design included geotechnical slope and seismic stability modeling and hydrology and hydraulics modeling and calculations for creek flood plain and for all run-on and runoff channels. Substantial requirements of permits were determined for design and followed through construction. All grading design was completed using AutoCAD Civil 3D.

CDM Smith supported CDPHE by providing various services, including construction oversight, document control, submittal review, and invoice review. We reviewed all interim and as-built topographic survey submittals for determination of payment on excavation, consolidation, and other volumes and metrics required for payment. We implemented soil confirmation sampling for remedy to confirm action levels using XRF, with a subset of laboratory confirmation samples.

Following successful construction completion in November 2012, CDM Smith supported CDPHE with review of the contractor's operation and maintenance (O&M) plans, various warranty submittals, and site inspections to ensure remedy protectiveness including the establishment of vegetation on the repository soil covers, as well as developed a remedial action completion report. Following September 2013 historic flooding in Boulder County, site inspection was conducted and confirmed that stormwater run-on controls (riprap-lined channels) and the repository vegetated-cover systems performed well and maintained remedy protectiveness. CDM Smith conducted ongoing warranty inspections of vegetation establishment through 2015 before transitioning management to CDPHE.

California Gulch Superfund Site, Lake County Impacted Soil Repository Design and Construction

Leadville, Colorado

CDM Smith provided pre-design investigation, engineering design, and construction oversight services for the Lake County impacted soil repository in Leadville, CO. The purpose of the repository is to provide a long-term disposal facility for metals-impacted soils from residential yard and commercial property reclamation conducted by the State of Colorado or the EPA as part of the California Gulch Superfund project. CDM Smith designed the 50,000 cubic yard repository to operate for several years with the use of multiple storage cells and temporary cover systems until final repository volume was reached and a final cover was ready to be installed.

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CDM Smith implemented a pre-design investigation that included evaluation of agronomic and geotechnical properties for a repository cover soil borrow area, evaluation of agronomic properties for cover soils at an adjacent existing mine waste repository, evaluation of geotechnical properties for several potential clay borrow areas for use as repository liner, evaluation of cultural resources, and ground surveying. We completed design data evaluation and developed a basis of design report for the repository, technical specifications, construction drawings, and cost estimate and schedule for the project.

In addition to these engineering design services, CDM Smith provided bid support and contractor selection as well as construction support services and contractor oversight during construction of the repository.

BHP Legacy Assets, Climate Resilience and Adaptation Program

Canada and United States

CDM Smith partnered with BHP to create a methodology to assess the risk that current and future climate conditions present to BHP's legacy assets. Using data from a variety of industry and client sources, as well as CDM Smith best practices, this methodology helped prioritize mining sites and assets in most need of climate adaptation design measures.

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Project Background

BHP groups its former mine sites in North America into nine legacy operations, with legacy assets in Arizona, California, New Mexico, Utah, British Columbia, Nova Scotia, Ontario, and Quebec. Each operation is in various stages of site closure. BHP develops

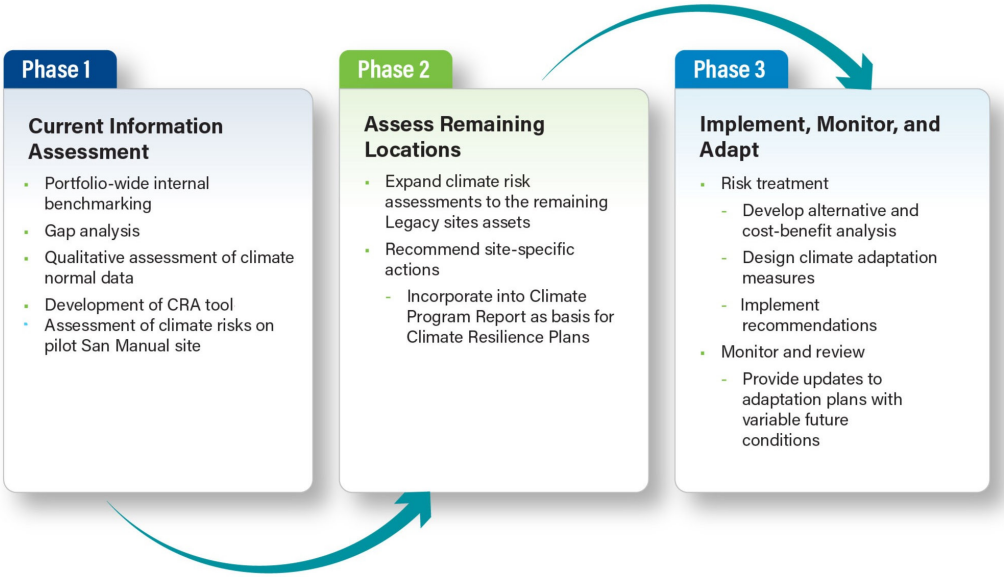

Figure 1: BHP and CDM Smith's Three-Phase Process

a risk register for their legacy site assets. Based on climate trends and predictions, there is growing concerns regarding the hazards of more frequent and severe weather events. In addition, international mining guidance requires consideration of climate change.

Project Approach

CDM Smith and BHP developed a three-phase approach.

Phase 1 leveraged existing climate change assessments and guidance documents provided by BHP for development of a climate risk assessment (CRA) tool. It proposed a practical and easy-to-implement CRA methodology to capture site-specific attributes and be reproduced for site screening across the Legacy Assets portfolio in the U.S. and Canada to allow facilities to assess and analyze the risks associated with their assets. During Phase 1, the tool was piloted for the San Manuel, Arizona location.

Phase 2 built upon the successful outcome of the Phase 1 Pilot Program and applied the CRA tool to the remaining North America locations. Collaborative virtual workshops with BHP onsite facility managers/operators were held to effectively engage and provide input for the risk assessment of each site. Recommendations were captured in site-specific reports. The reports served as the framework for Phase 3 to build actionable Climate Resilience Plans for the mining sites.

Phase 3 of the work was led by BHP to implement the recommended actions identified during Phase 2. Using the priorities identified by the CRA tools, specific risk treatment actions were incorporated into Climate Resilience Plans to reduce future risks and potential impacts. Periodic monitoring and adaptation were necessary to evaluate any changes in climate risks and to adapt portfolio assets.

Phase 1 "Current Information Assessment" Project Specifics

Climate Normal Data Quality Assessment. CDM Smith reviewed prior BHP risk guidance and climate risk assessments and data. CDM Smith identified areas of improvement in methodology, data collection, and analysis. For example, CDM Smith noted that a large percentage of the climate parameters being tracked were not actionable for calculating climate hazards to mining assets and recommended a more streamlined group of parameters.

Mining Sector Standards and Guidance. CDM Smith reviewed the standards of the Mining Association of Canada (MAC) and the International Council on Mining and Metals (ICMM) to assess their recommendations and requirements related to climate change assessments in the mining sector.

Climate Projections. CDM Smith reviewed BHP's operation-specific climate change assessments. CDM Smith recommended that rather than assume all climate Representative Concentration Pathways (RCPs) have an equal probability of occurrence, which is no longer a valid assumption, that RCP8.5 be used to capture the most plausible range of changes in climate for climate risk assessments of the client's critical assets and infrastructure.

Climate Hazards. CDM Smith developed a list of chronic and acute climate hazards and corresponding statistical parameters that can be used to determine and quantify each of the climate hazards. Chronic conditions considered increasing temperatures, decreasing rainfall, and increasing evapotranspiration. Acute conditions considered extreme rainfall, extreme heat, extreme wind, drought, wildfire, extreme temperature fluctuation, and flooding.

Mining Asset Types and Potential Climate Change Impact Severity. CDM Smith worked with the operations to develop a list of critical mining operations assets that may be impacted by climate hazards. These included heap leach facilities, stockpiles, landfills, open pits, tailing dams, stormwater management infrastructure, mine waste dumps, and underground mines.

Risk Likelihood Assessment for Physical Climate Risk. CDM Smith worked within the client's robust methodology to identify, document, and assess risks to assets and business practices.

Prioritization and Recommendations. Those identified climate risks for certain assets exceeding certain risk tolerances were then summarized with recommendations for next steps.

Phase 2 "Assess Remaining Locations" Project Specifics

CDM Smith performed peer review for the climate risk assessments at eight additional legacy mining operations in North America. The team followed the same methodology previously developed to input data necessary to calculate severity and climate risk likelihoods for at-risk facility assets. From these, the CRA tool allowed prioritization and implementation of the recommendations.

Phase 3 "Implement, Monitor and Adapt" Project Specifics

Phase 3 of the work helped BHP to implement the recommended actions identified during Phase 2. Using the priorities identified by the CRA tools, specific risk treatment actions were incorporated into Climate Resilience Plans to reduce future risks and potential impacts.

Anaconda Smelter Superfund Site

Deer Lodge Valley, Montana

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CDM Smith has supported the Anaconda Smelter Superfund Site since 1984 under a number of contracts. This writeup describes CDM Smith's engineering design and construction oversight activities completed since 2010.

Nearly 100 years of copper ore processing operations at the Anaconda Smelter Superfund Site have produced airborne emissions and large quantities of waste with elevated concentrations of arsenic and metals such as copper, cadmium, lead, and zinc. The contaminants are present in all media, posing potential risks to human health and ecological receptors over more than 200 square miles. CDM Smith has provided technical assistance, support, and Potentially Responsible Party (PRP) oversight. Specific activities included planning, project management, site characterization, identification of ARARs, development of technical impracticability waivers, risk assessments, alternative evaluation and feasibility studies, wetland and ecological studies, construction design support, land reclamation, and community involvement.

- **RD/RA Oversight:** CDM Smith has provided technical support and oversight for PRP remedial activities conducted under CERCLA at the Anaconda Smelter site. Work to date has included final capping of 3,500 acres of tailings impoundment, in situ soil treatment of over 10,000 acres of smelter emissions-impacted upland soils; replacement of 1,300 residential yards contaminated with elevated levels of arsenic and lead; and removal of fluvially deposited tailings along two stream corridors over several miles. Our oversight work has included preparing Basis of Design/Design Criteria Reports to guide the PRP-lead designs. CDM Smith has also prepared two final design reports for the PRP to subsequently develop remedial action work plans for construction.
- **Mining Waste Reclamation Construction:** CDM Smith conducted several mining waste and contaminated soil removals and waste removals for EPA when the PRP declined to perform the work due to differences of opinion regarding the scope of the remedy. CDM Smith conducted sampling to define removal quantities of contaminated materials and to identify borrow sources for backfill. Subsequently CDM Smith prepared remedial designs, bid packages, construction quality assurance plans, and technical specifications for remedial action. We conducted oversight of the selected contractors conducting the work and performed verification sampling to ensure all contaminated materials were removed and that backfill beneath a parking lot was compacted to project specifications. Sites were subsequently surveyed to generate site grade and as-built construction completion drawings.

Borrow area development during closure of the Smelter Hill waste management area

- **Cultural and Historic Preservation:** CDM Smith provided a full-time RA construction oversight engineer who is trained to identify cultural and historic resources during construction. We assisted in negotiating mitigation measures for these resources in consultation with the PRP, tribal representatives, and local government, resulting in a site-wide preservation plan.
- **Environmental compliance-related services:** We prepared a biological assessment to assess the impacts of remedial actions from historic mining and smelting activities in four watersheds (Warm Springs, Mill, Willow, and Lost Creeks) on four federally listed species: Canada lynx, grizzly bear, red knot, and bull trout. We coordinated with USFWS to evaluate the effects along Warm Springs Creek, identified as Critical Bull Trout Habitat, to allow the service to develop stipulations in their biological opinion.
- **Steep Slope Reclamation Design:** We developed a reclamation toolbox for four main categories of steep slope reclamation (SSR) for the uplands portion of the site consisting of revegetation techniques and stormwater on-slope and in-channel best management practices. The PRP used these to develop sediment erosion control plans for the RD/RA of over 10,000 acres of upland areas impacted by smelter emissions to reduce runoff of stormwater contaminated with metals into receiving streams. We completed innovative vegetation management plan revisions that incentivized the PRP to complete extra cleanup beyond CERCLA requirements in exchange for reduced long-term O&M. We generated an anticipated floodplain width design based on geomorphic analysis of a channel migration zone (CMZ) and anticipated post-remedy vegetation, helping to focus predesign investigations on locating mining wastes in the floodplain for removal, while allowing soil treatment to occur outside the CMZ, resulting in cost savings for removal actions.
- **Construction Oversight:** We provided field oversight of RA construction to verify that remedies were implemented by approved designs, work plans, and specifications. Oversight included residential yard removal, removal of fluvially deposited tailings and stream restoration, and reclamation of upland areas impacted by smelter emission fallout through soil treatment and steep slope reclamation.
- **Assistance with evaluations, assessments, studies, reports, community relations, PRPs, and environmental laws/ regulations:** CDM Smith provided community relations support as requested by EPA. We developed annual remedial action construction update fact sheets that were distributed as inserts in local newspapers and later posted on EPA's website. In response to community concerns expressed at public meetings conducted by EPA, CDM Smith completed the following tasks: (1) sampling interior dust in local schools and subsequently cleaned up inaccessible dust exceeding arsenic and lead residential cleanup standards; (2) designed and conducted a garden produce study to determine if consuming community-grown fruits and vegetables posed a health risk through metals uptake; and (3) evaluated the bioavailability of lead and arsenic in slag and later designed an air monitoring program at nearby receptors to evaluate concerns over wind-blown slag. We supported public meetings, prepared notices, developed PowerPoint presentations and handouts, and provided subject matter experts as needed.

Midnite Mine Superfund Site

Wellpinit, Washington

The Midnite Mine Superfund Site is an abandoned uranium mine located near Wellpinit, WA, located on Spokane Tribe of Indians Land. The site is being cleaned up under a consent decree by the settling defendant, Newmont Mining Corporation. Remedial action construction has been ongoing at this site since 2016. The scope of the remedial action for mine closure includes excavation and disposal of over 18 million cubic yards of low-level radiologically contaminated mine waste material into the two open pits, low permeability cover construction over the consolidated waste, reclamation of all excavated and disturbed areas, run-on and runoff controls, MIW collection and treatment in an on-site water treatment plant (WTP), and discharge of treated water through a 5-mile long pipeline system to a nearby reservoir. Since 2021, CDM Smith has provided technical oversight services to the EPA through a US Army Corps of Engineers (USACE) contract framework. CDM Smith's work has included the following:

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- Technical document review, community involvement coordination, field inspection oversight, and technical review of remedial design changes and remedial action documentation.

- Regular inspections and operations reviews for the existing on-site WTP which treats approximately 60 million gallons of mine-impacted water per year using a high-density lime sludge treatment process. Reviewed updates to the site management plan to allow WTP sludge to be shipped to the Blanding Mill in Utah for reprocessing and extraction of uranium instead of ongoing waste facility disposal in Idaho. The WTP produced sludge has concentrated uranium requiring an NRC Radioactive Materials License.
- Remedial action field oversight for construction activities including, but not limited to, mine waste excavation and consolidation earthwork, pipelines, water storage ponds, liners, water diversion channels, borrow soil excavation and processing, cover placement and revegetation, and construction of a new WTP that will capture water from the open pit/mine waste repository and a seepage pump-back system. Treated water will be routed via a 5-mile-long discharge pipeline to a nearby reservoir managed by the US Bureau of Reclamation. Water from the current WTP is discharged through a NDPES permit, which will be renewed post-startup of the new WTP.
- Provided technical review for revegetation plan-related documents focused on land reclamation and providing recommendations on the addition of soil amendments to on-site borrow soil to improve revegetation success.
- Provided technical review for geotechnical pre-design investigation for water storage pond design for the new WTP. Geotechnical investigation was completed in 2023 to provide data for the pond dam impoundment design for slope and seismic stability. Also provided technical review slope and seismic stability calculations/modeling for an existing water storage pond impoundment.
- Provided technical support in the development of a confirmation sampling workplan/QAPP that uses field-portable x-ray fluorescence (XRF) data in addition to gamma survey to evaluate remaining total uranium contamination versus background.
- Conducted evaluation of post-remedy land uses and completed human health risk assessment evaluations for the end land uses. Coordinated with the EPA and Tribe on land uses and developed technical memorandum to calculate and evaluate risk reductions using different mine waste and impacted soil cover scenarios.
- Developed a 3D model of the site using AutoCAD Civil 3D and Leapfrog for use to evaluate annual completion report data and groundwater well data. Provide input and feedback to the EPA on construction progress and observations with the extent of groundwater contamination.

Upper Tenmile Creek Mining Area Superfund Site

Helena, Montana

The Upper Tenmile Mining Area Site is a large and historic mining site that consists of surface mining sites, waste piles, discharging adits, mine shafts, and underground mine workings within a 53-square-mile area. The site varies in elevation from 4,500 to 8,000 feet and includes residential properties, steep mountainous terrain, forests, streams, wetlands, and open space. Site access is limited to rough forest and historic mining roads, abandoned railroad right-of-way, and accessible areas adjacent to mountain streams and floodplains.

The primary sources of contamination at the site are the numerous abandoned and inactive hard rock mine sites that once produced gold, lead, zinc, and copper. The contaminated media and sources include residential yards, overburden, mine waste, mine tailings, soils, discharging adits, surface water, groundwater, and sediment. CDM Smith has been working at the site since 2001. Our work is ongoing and has covered all aspects of the remedial investigation, feasibility study, proposed plan and ROD support, remedial design, and remedial action. Work was performed for EPA Region 8 through 2020, and current work assignments for the site are for the Montana Department of Environmental Quality. Work in the past 15 years has included:

- Preparation of eight remedial designs for excavation and transport of almost 200,000 cubic yards of mine waste and contaminated material from residential areas, mine sites, railways, tramways, and roadways, consolidation of the contaminated material in the Luttrell regional waste

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Team Members:

- Trent Thomas
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- Winston Parker

repository, and backfill and restoration of the sites. The design and construction activities have also included the expansion of the Luttrell repository located near the Continental Divide at the site of a former open pit gold mine.

- Development of basis of design reports, plans, specifications, calculations, and construction cost estimates prepared using the U.S. Army Corps of Engineers' Micro-Computer Aided Cost Engineering System (MCACES) Second Generation (MII) software. Design drawings were generated using AutoCAD Civil 3D software. Where required, geotechnical design and calculations for slope and seismic stability were completed, along with design and calculations for hydrology and hydraulics for related run-on and runoff controls, water storage ponds, and piping systems.
- Developing design documents using a phased approach to allow for incremental construction funding and a limited 4-month construction season given the high elevation and difficult terrain.
- Performance of oversight during the remedial action construction on all the designs prepared, including review of construction related submittals, interim and as-built topographic survey submittals for determination of payment on excavation, consolidation, and other volumes and metrics required for payment. Implemented all soil confirmation sampling for the remedy to confirm action levels using XRF, with a subset of laboratory confirmation samples.
- Completion of remedial design, bidding, and construction oversight for 28 residential properties, 13 mine sites, and a roadway. The sites were backfilled, revegetated, restored, monitored, and maintained.
- Conducted detailed site-specific sampling, analysis, and field testing needed for remedial designs, including residential well water, multi-media sampling (mine waste, soil, adit discharge, acid mine drainage, seeps, groundwater, surface water, and sediments); specialized data gathering including, synoptic stream gaging, contaminant loading studies, tracer testing of mine workings, percolation tests, determination of the limit and extent of mine waste/tailings for removal at mine sites; and long-term monitoring of water and sediment quality in Tenmile Creek as remedial action construction is completed.
- Evaluation of historic and cultural resources at the site to ensure all activities complied with applicable requirements.
- Bench-scale and pilot-scale passive treatment studies for site mining influenced water discharges
- Full-scale passive treatment design for leachate discharge from the Luttrell repository.

Bunker Hill Mining and Metallurgical Complex Superfund Site

Coeur d'Alene, Idaho

Project Manager:

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The Successor Coeur d'Alene Custodial and Work Trust (CdA Trust) was set up after the largest settlement in EPA history for $1.7 billion for cleanups across the country. Approximately $494 million of the settlement went toward the cleanup of the Bunker Hill Superfund Site and settlement funds went to the CdA Trust. CDM Smith was awarded an engineering support contract with the CdA Trust to support the recovery of wildlife and natural resources from abandoned mining impacts associated with the Bunker Hill Superfund Site. CDM Smith's first task was to consolidate approximately 1.5 million cubic yards of mine waste at the East Fork Nine Mile (EFNM) Waste Consolidation Area (WCA) in the basin.

CDM Smith worked closely with the CdA Trust as the engineering, design and construction management consultant to deliver a successful project in compliance with EPA standards. We identified a unique topographic saddle area in the drainage that had been overlooked by the previous consultant, and this site was free of many of the complex issues than the other sites that were identified for use. As part of the evaluation of the proposed WCA, we estimated that the use of this proposed location could result in a cost savings of over $17 million by reducing the WCA footprint while providing enough capacity for the anticipated waste volume with the ability to expand by nearly 50% more capacity (i.e., 1.3 million to 2 million bank cubic yards).

We successfully completed the following engineering design and construction management activities at the site:

- Identified pre-design investigation activities, including soil borrow area assessments for repository cover suitability and geotechnical sampling and analyses for repository slope stability assessments and tailing impoundment buttress design. The team used light detection and ranging (LiDAR) and aerial survey techniques to develop detailed topographic

mapping in remote mountainous areas and used AutoCAD Civil 3D to accurately show the WCA development, grading and accurately quantify cut/fill volumes.

- Identified an on-site quarry located directly adjacent to the WCA that could be used for both construction materials at the EFNM WCA and for reclamation materials at the remedial action sites within the EFNM basin.

Additional design projects have included multiple innovative waste repositories in high elevation steep ground, repositories on former tailings facilities, stream restoration, sediment cleanup, reclamation of mine waste dumps and tailings and a wide range of historic basin wide mining issues. For the Rex Mine and Mill Site Improvement Design-Build project, CDM Smith, the CdA Trust, and EPA negotiated a remedial design approach using a significantly reduced level of effort to expedite a final design that could be completed within 6 months such that construction could be completed in the same year as design.

We are currently supporting the early phases for cleanup of the Lower Basin that includes addressing mine tailings impacts in the lower approximate 38 miles of the Coeur d'Alene River. Early work is to build a Lower Basin prioritization plan to include the site hydraulic and sediment transport models, design infrastructure, and pilot studies to further test and evaluate bed and bank cleanup technologies.

Jack Waite Mine and Mill Site

Coeur d'Alene, Idaho

Project Manager:

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Team Members:

Nicholas Anton

Prior to the Coeur d'Alene Trust settlement, CDM Smith provided support for reclamation design and removal action activities at the Jack Waite Mine Site located in the Coeur d'Alene Basin for the US Army Corps of Engineers.

The Jack Waite Mine is an abandoned lead/zinc/silver mine site located on public land administered by USFS in a remote portion of the Panhandle National Forest. Key former mining site features include the 1500-level adit discharge, associated mine waste piles, four tailings piles, and a mill site. Major sources of metals loading to Tributary Creek at the site include erosion of material from the tailings piles and the 1500-level adit discharge. The four tailings piles total approximately 6 acres in size and include 300,000 cubic yards of tailings requiring removal, consolidation, and capping. Engineering design and removal actions were completed in accordance with a 2007 Action Memorandum and funding from the project. CDM Smith successfully completed the following engineering design activities at the site:

- Worked effectively with multiple agencies and stakeholders to complete reclamation.
- Performed pre-design investigation activities, including soil borrow area assessments for repository cover suitability and geotechnical sampling and analyses for repository slope stability assessments and tailing impoundment buttress design. Used light detection and ranging (LiDAR) and aerial survey techniques to develop detailed topographic mapping in remote mountainous areas and used CAD 3D to accurately show mine waste/tailings consolidation and repository grading and accurately quantify reclamation cut/fill volumes.
- Completed 100-year flood modeling of Tributary Creek using HEC-RAS to accurately locate tailings repositories away from stream flow and design riprap toe protection for erosion protection.
- Provided design documents (basis of design, specifications, drawings, and cost estimates) to allow for efficient reclamation implementation by USACE contractors. Provided bidding services and construction administration support during removal actions. Incorporated innovative approaches including utilizing the latest x-ray fluorescent techniques for remedial action confirmation sampling.

As a result of limited annual funding and a relatively short construction season (July through November), CDM Smith and the project stakeholders successfully implemented a phased project approach as follows:

- **2007 Initial Design/Removal Action:** The first design and removal action phase included regrading the mine waste pile (8,000 cubic yards) and rerouting the 1500-level adit discharge.

- **2008 Second Design/Removal Action:** The second phase of design and removal action included removal of Tailings Pile 4 (TP-4) and consolidation of the material to Tailings Pile (TP-3); restoration of the former TP-4 area near the confluence of Tributary Creek and the Eagle Creek; regrading TP-3 impoundment; and temporary erosion control was installed on TP-3 (riprap toe protection, silt fence, waddles) to allow for phased consolidation.
- **2010-2012 Final Design/Removal Action:** The final phase of design and removal action included the removal of two tailings piles (approximately 175,000 cubic yards of material) and consolidation to two on-site repositories utilizing composite covers (low permeability geosynthetic beneath a 2-foot thick soil cover). The action also included rehabilitation of Tributary Creek for bull trout habitat restoration. The final design also included a site-wide operation and maintenance (O&M) manual and a long-term revegetation plan for overland habitat restoration/revegetation.

Gilt Edge Mine Superfund Site

Lawrence County, South Dakota

Project Manager:

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Team Members:

- Gunnar Emilsson
- Nicholas Anton
- Greg Sanders

CDM Smith has performed a variety of tasks at the Gilt Edge Mine Superfund Site under multiple contracts since 2000. Tasks addressed acid mine drainage, mine-influenced water (MIW) and mine waste contaminated with metals such as arsenic, cadmium, lead, selenium, and thallium. CDM Smith's work has included:

- Conducted a remedial investigation, including hydrogeological assessment, synoptic sampling of surface water, geochemistry testing of a heap leach pad, sampling of mine waste and tailings at the mine and in creeks, and sampling of on-site and off-site materials to determine appropriate plant species and suitable plant growth media amendments.
- Performed pre-design investigations for sludge removal remedies or in situ sludge stabilization. Evaluated caustic water treatment sludge, cyanide neutralization sludge, and "hard bucket sodium hydroxide" treatment sludge. Conducted PHREEQC geochemical modeling and developed mixing-cell models related to the pit lakes.
- Designed groundwater extraction systems at two locations on-site and clean water diversions to reduce the amount of unimpacted water entering the on-site water collection and treatment system.
- Completed design to consolidate and contain ARD source materials on site. Plans included a geomembrane-lined sludge disposal cell and the installation of a flexible membrane liner to entomb the ARD-producing material.

- Used a 3D data visualization model to evaluate cut and fill elevations. The model results enabled CDM Smith to minimize slopes, maximize on-site waste disposal, and perform alternative cost-benefit analyses for maximizing land reuse according to the EPA's mixed-use redevelopment goals.
- Performed design, construction, commissioning, and long-term O&M services to convert the site wastewater treatment plant to a high-density sludge (HDS) treatment system and provide 24/7 operation to capture and treatment ARD. Achieved exceptional plant performance (95% online efficiency), consistently meeting water quality standards for discharge to Strawberry Creek, a cold-water trout fishery.
- Completed the remedial design of the primary mine disturbance area that focused on removal, consolidation, and restriction/minimization of contaminant source material interaction with precipitation, surface water, and groundwater.
- Provided engineering services to EPA and USACE Omaha District during the implementation of the remedial action construction.

Klau/Buena Vista Mercury Mine Superfund Site

San Luis Obispo County, California

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Team Members:

- Stephen Dent
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- Greg Sanders

The Klau/Buena Vista Mine Superfund Site includes abandoned mercury mines and areas downstream contaminated by mine tailings released into Las Tablas Creek from 1868 to 1970. From 2010 to 2021, CDM Smith assisted with characterizing mercury and methylmercury in soil, sediments, and water, assessing ecological risks, and evaluating mercury fate and transport in sediments.

CDM Smith characterized mercury-contaminated sediments, soil, and water in Las Tablas Creek and Las Tablas Reservoir. We developed sampling plans using the Lumex portable mercury analyzer for rapid, near real-time analysis in a field laboratory to support iterative and dynamic work strategies.

We also sampled soils and sediments for laboratory mercury and methylmercury analyses utilizing the EPA clean hands-dirty hands sampling method to provide for laboratory detection of methyl mercury to ultra-low (part-per-trillion) levels. We used this data to prepare a baseline ecological risk assessment, which evaluated risks to aquatic and terrestrial ecological receptors exposed to mercury and methyl mercury in soils, sediments and water.

CDM Smith conducted a sediment erosion and depositional analysis (SEDA) and contaminant loading assessment to evaluate the fate and transport of mercury and methylmercury in the Las Tablas Creek watershed. The study found that mercury fate and transport are strongly influenced by seasonal precipitation and high-flow events, which erode and transport contaminated sediments downstream. The SEDA enhanced understanding of these processes and helped evaluate strategies to mitigate mercury transport and methylation in the watershed.

An intermittent reach of Las Tablas Creek downstream from the Klau and Buena Vista mines where mercury is present in contaminated sediments and soils

Black Butte Mine Superfund Site Remedial Investigation and Removal Action Support

Cottage Grove, Oregon

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Team Members:

- Stephen Dent
- Kent Whiting
- Nicholas Anton
- Gunnar Emilsson
- Trent Thomas

CDM Smith initiated a remedial investigation/feasibility study to address mercury contamination from tailings piles at the abandoned Black Butte Mine site. Following initial RI activities, EPA decided to address the primary contaminant source through a removal action and directed CDM Smith to complete an engineering evaluation/cost analysis (EE/CA).

Remedial Investigation

RI activities included stream surveying, hydrology monitoring, surface water sampling sediment sampling, soil sampling, well installation, development, groundwater sampling and LiDAR surveying. For the soil investigation, CDM Smith employed an all-terrain rotosonic drill rig to collect continuous soil cores, which were analyzed in the field using X-ray fluorescence (XRF) to provide real-time metals data during the investigation. For the groundwater investigation, we installed monitoring wells to depths of up to 70 feet. XRF was used to analyze soil samples and obtain real-time metals data in the field. The field team collected surface water, groundwater, and precipitation samples following EPA Method 1669 clean-hands sampling protocol

for analysis of trace metals. We installed a Mercury Deposition Network automatic precipitation collector to provide data for understanding trace level mercury concentrations present in the air.

Removal Action Support

After CDM Smith confirmed that Furnace Creek is the priority target for removal action and source control, EPA began the process of a Non-Time-Critical-Removal Action (NTCRA). We began an EE/CA, using the RI results to prepare for and guide the NTCRA. As part of the evaluation, CDM Smith evaluated alternatives for removal, containment, and particulate management.

Using the results of the evaluation, we developed a flexible and adaptive design and implementation plan for the NTCRA. The selected alternative is intended to reduce mercury loading from the abandoned mine and reduce residential exposure to mercury, arsenic, and other metals via removal of tailings and mercury-impacted soils and placement in an on-site repository. We also provided recommendations for creek restoration, erosion controls, and residential soil removal.

Risk Assessments

CDM Smith conducted a screening-level ecological risk assessment of mercury contamination from adits and tailings affecting sediments and fish in downstream aquatic systems. Our scientists evaluated impacts to benthic invertebrates, fish, amphibians, semiaquatic birds and mammals, plants, soil invertebrates, and terrestrial birds and mammals through soil, sediment, surface water, aquatic food items, and terrestrial food items. We also developed a conceptual site exposure model for human health risks and conducted pathways analysis for exposure to mercury via ingestion of fish.

Central City/Clear Creek Superfund Site Engineering Studies

Denver, Colorado

The Central City/Clear Creek Superfund site encompasses portions of the 400-square-mile Clear Creek Watershed and is located approximately 30 miles west of Denver, CO, in Clear Creek and Gilpin Counties. Under a State Superfund Grant, the Colorado Department of Public Health and Environment (CDPHE) is leading the remedial investigation (RI) and human health risk assessment (HHRA) to identify mine waste in the watershed and evaluate its human health risk due to residential exposure, the feasibility study (FS) to evaluate potential remedial alternatives and develop the Record of Decision (ROD). CDM Smith is supporting the CDPHE for completion of all phases of work.

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Team Members:

- Nicholas Anton
- Kent Whiting
- Trent Thomas
- Winston Parker

CDM Smith has rapidly completed initial project activities, including:

- Project kickoff activities, including development of key project objectives and critical success factors with CDPHE
- Coordination with EPA and CDPHE project managers and risk assessors to define data quality objectives and HHRA thresholds for use in the study
- Aerial photography and historic records review to identify mine waste sources and locations for further investigation
- On-site reconnaissance to identify and confirm mine waste piles, accessibility, and potential properties impacted by residential exposure to the source material
- Development of a source tiering approach to categorize and rank waste piles, and determine priorities for investigation
- Development of sampling and analytical approaches included in the project quality assurance project plan and field sampling plan
- Identification of property owners of over 140 individual waste piles, distribution of over 600 access request letters to associated owners, and follow-up phone calls to obtain access
- Development of a project database to track waste pile characterization and property ownership.

In August 2022, we mobilized a team of professional geologists and engineers to the site for completion of sampling and characterization of up to 100 mine waste piles, including field screening using x-ray fluorescence (XRF), collection of samples

for total metals and in vitro bioaccessibility, and electron microprobe evaluation to confirm mineralogy. CDM Smith's field team completed multiple weeks of sampling, with up to 600 total samples collected. Sample processing were completed at CDM Smith's Denver Treatability Laboratory, where samples were dried, sieved, and sorted for distribution to the laboratories. The collected data was used to evaluate potentially impacted media, and develop the exposure assessment, HHRA, and RI report. Statistical evaluation of the dataset was completed to establish correlations between the portable XRF and laboratory total metals to reduce future project analytical costs. All data was validated in-house and maintained in the project database.

Following development of the draft HHRA and RI report, we initiated the FS, including screening and detailed and comparative analysis of remedial alternatives, development of cost estimates for alternatives, and support of applicable and relevant and appropriate requirements determination. Alternatives include removal, in situ stabilization, and regrade/cap in place. Evaluation of the existing site repository was completed to determine available capacity and to recommend potential modifications to increase capacity and stability. Following the FS, CDM Smith is supporting development of the proposed plan and ROD to document the selected remedy, including facilitation of public review and completion of the responsiveness summary.

Concurrent with the RI sampling and HHRA, CDM Smith will support CDPHE with completion of an interim ROD (IROD) to expedite cleanup of waste piles that pose significant risk to human health. We will complete supplemental sampling to delineate areas requiring action, a focused FS and risk evaluation memorandum to support development of the IROD, and the proposed plan and IROD documents.

Y&O Road Highwall and McCormick Road Highwall and US 30 Ecological Services

Ohio AML Program under Infrastructure Investment Jobs Act (IIJA)

Project Manager:

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Team Members:

- Devin Wilson
- Glenn Iosue

The Ohio Department of Natural Resources (ODNR), through the Division of Mineral Resources Management AML Program, awarded CDM Smith with two contracts to address concerns related to abandoned mine lands and highwall reclamation, ensuring compliance with environmental regulations and promoting ecological restoration.

The scope of the projects included ecological services, which involve a comprehensive literature review to determine the presence or absence of ecological resources that could impact compliance with the National Environmental Policy Act (NEPA). The projects involved CDM Smith personnel conducting Waters of the U.S. investigations/wetland delineations/stream assessments, T&E species surveys, vegetation surveys, and surface water sampling in support of the design and construction of the Y&O Highwall, and McCormick Road Highwall and US-30 reclamation projects. This work also included field surveys to document, identify and characterize any sensitive resources present within the potential project boundaries, including Waters of the US (e.g., streams/wetlands), critical habitat for endangered species, and any areas predominantly composed of invasive species. Finally, services also included Section 7 of the Endangered Species Act (ESA) consultation with the United States Fish and Wildlife Service (USFWS), sections 404 and 401 of the Clean Water Act permitting with the United States Army Corps of Engineers (USACE)/Ohio Environmental Protection Agency (OEPA), and NEPA document (CE, EA or EIS) preparation.

The CDM Smith team received excellent feedback from ODNR for our work on these two AML contracts. ODNR provided a formal feedback evaluation, which included rating our team 'excellent' in the category of helpfulness, and 'exceptional' in the categories of responsiveness, quality, accuracy, resources, schedule, budget, and scope. ODNR rated our team's performance a '9/10' overall. Members of our proposed team were involved with the success of these AML projects.

Moss Mine Planning and Permitting

Northwest Arizona

CDM Smith provided mine planning, design, construction, and permitting services for the Moss Mine project in northwestern Arizona. These activities were conducted for development of an open pit gold and silver mine including cyanide heap leach ore processing and carbon in leach recovery facilities. CDM Smith assisted in the evaluation of the resource, mine layout, facility design, construction, and construction quality management for the project. CDM Smith constructed the $5 million heap leach gold processing facilities under a design-build contract. CDM Smith also assisted Northern Vertex with preparation of an Arizona APP, Arizona Mined Land Reclamation Permit, SWPPP, and participated in negotiations with the BLM Kingman Office for the Moss Mine.

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Team Members:

- Dustin Klempel
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- Greg Sanders

Douglas Creek Subsidence Closures

Douglas Creek, Montana

CDM Smith has provided services to close 15 active mine subsidence features at TAI's dormant Douglas Creek property since 2011. In addition, CDM Smith performed an investigation at one subsidence and completed a closure plan evaluation for another subsidence. As part of the design-build closures, CDM Smith completed 3D Vulcan modeling of the underground mine workings to assist with evaluation of closure options. It addition to Vulcan modeling, CDM Smith completed ground penetrating radar (GPR) subsurface void investigation to further evaluate the features and identify subsurface voids near the ground surface to safely complete the closures.

Closure activities varied widely. At one subsidence CDM Smith excavated wooden remnants of a collapsed timber frame and then conducted exploratory excavation. Once it was determined there were no openings into the underground workings, the excavated area was filled with local materials and graded to match the existing ground. Four of the features that had been sealed with concrete caps had small openings along the outer perimeters of the caps caused by burrowing animals. We used expandable foam sealant to fill in the holes and covered the seals with soil to prevent degradation.

The largest and most technically challenging closure completed by CDM Smith at TAI's Douglas Creek Property was an approximately 45-foot by 45-foot wide, 35-foot-deep surface subsidence caused by a collapsed pillar in the north C-Bed of the dormant phosphate mine. CDM Smith completed evaluation of the subsidence in 2011 and completed closure in 2012.

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Team Members:

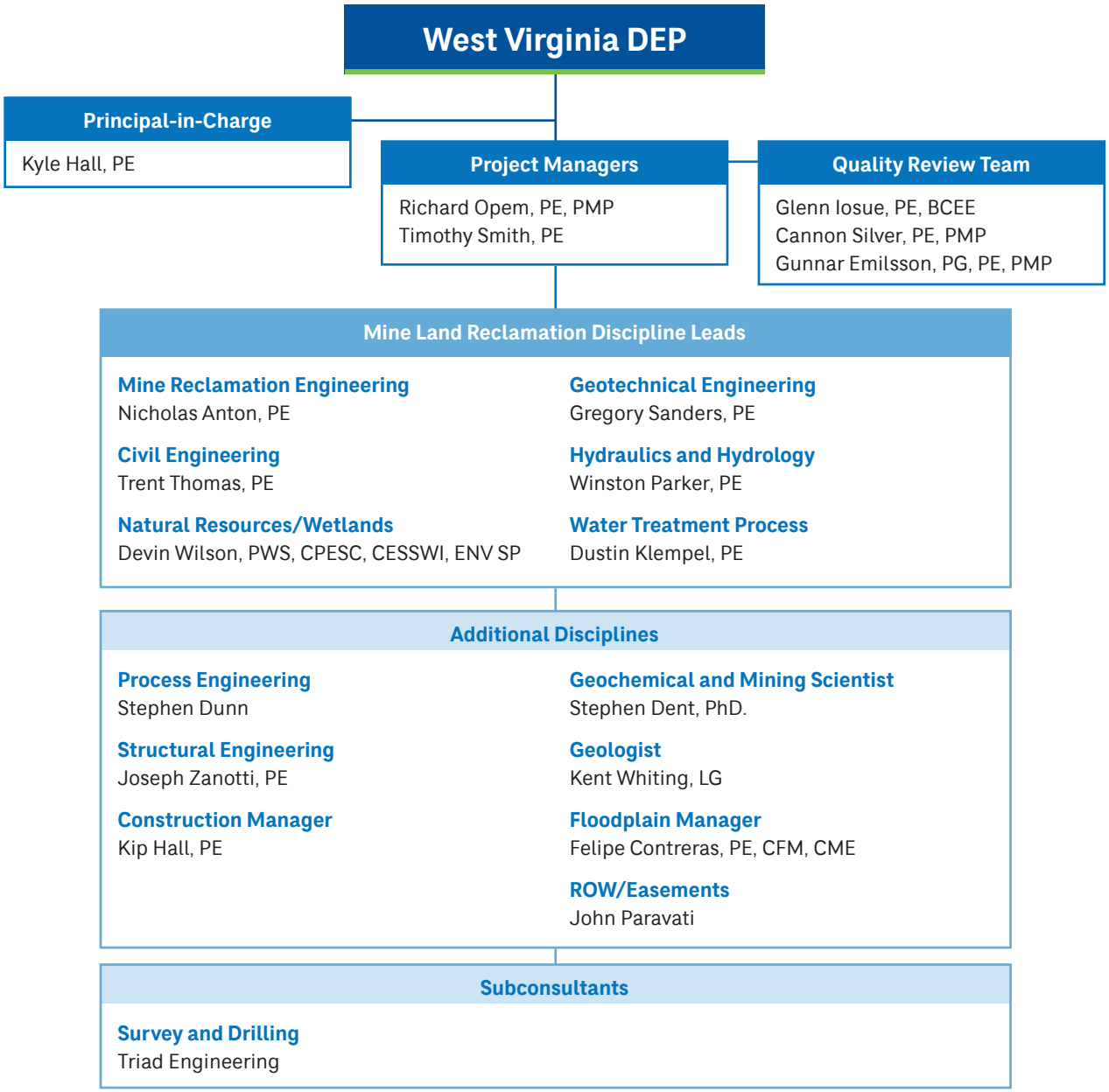
Trent Thomas

Available Resources

CDM Smith offers a talented, experienced, highly capable team of mining, environmental reclamation and restoration, and project management experts who have successfully completed similar projects. Our team includes professionals who have managed many projects in West Virginia, as well as numerous West Virginia Registered Professional Engineers with extensive mining and mining-related project experience in the United States and internationally.

Organizational Chart

Our organizational chart presented below details our team's structure to provide efficient project delivery. In addition to the key personnel named, we can tap into our firm's 6,900+ professionals in 130 offices worldwide to provide additional staffing and resources when needed to align with the needs of a particular project.



Key Personnel

The following pages offer brief introductions to the key personnel who will serve the Office of AML&R on its projects. Detailed resumes are included in **Appendix A**.

Experienced West Virginia Project Managers to Provide Leadership

Kyle Hall, PE – Principal-in-Charge

Kyle is an expert in the successful implementation of heavy civil engineering projects in West Virginia, having spent 33 years at WVDOH before joining CDM Smith. He held key positions in administration, management, and construction inspection during his tenure at WVDOH, and has brought that expertise to project implementation at CDM Smith. **A Licensed Professional Engineer in West Virginia (WV PE#012755)**, Kyle provides project management and construction management services, as well as client service, on a variety of projects in West Virginia.

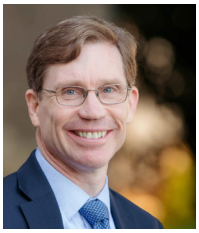
Richard Opem, PE, PMP – Project Manager

Rich is a civil and environmental engineer, and **Registered Professional Engineer in West Virginia (WV PE #024243)**. He has spent his 35 year career specializing in reclamation, restoration and impacted water treatment. His experience includes waste studies, designs, and construction, water treatment plans and designs, and permitting and compliance. He is currently managing a project to address impacted soil and water at the Hanlin Allied Olin Superfund Site in Moundsville, WV.

Timothy Smith, PE – Project Manager

Tim is a **Registered Professional Engineer in West Virginia (WV PE #019760)** with 19 years of experience working in the state. He has a deep understanding of state agencies and their requirements and expectations, having worked for the WVDOH in various capacities prior to joining CDM Smith. For WVDOH, his responsibilities included scope of work notes preparation, Initial Engineer's Estimates, negotiation memos, etc. He also served the Putnam County Commission as Planning Director/County Engineer for four years where his responsibilities included review of commercial, industrial, and residential plans for compliance with ordinances, building permit reviews, subdivision reviews, floodplain reviews and approvals. Tim understands what it takes to effectively manage large engineering projects in West Virginia. He has recently managed or is currently managing multiple infrastructure improvements projects in the state, including the design-build of the US 522 Northern Connector Bridge over the Warm Springs Run and the future North Berkeley Rail Trail in Berkeley Springs, WV.

Senior Technical Experts to Provide Quality Assurance/Quality Control



Cannon Silver, PE, PMP – Quality Review Team

Cannon has 30 years of experience leading site investigations, feasibility studies, technology evaluations, designs, construction oversight, treatment system operations and maintenance. He recently managed an assessment of BHP's legacy mine assets within Canada and the United States to help BHP prioritize the risks across its nine legacy operations and identify actionable measures for improvements.

Glenn Iosue, PE, BCEE – Quality Review Team

Glenn is a civil engineer and an expert in addressing impacted soil and treating water. He is a **Registered Professional Engineer in West Virginia (WV PE #027307)** with 28 years of engineering experience. Glenn has managed numerous projects at both active and abandoned mine sites throughout the United States. This has included reclamation and restoration activities, construction management, construction oversight, stream and habitat restoration, wetlands, treatment of mine-impacted soil and water, drainage controls, engineering designs for active and passive treatment systems as well as operation and maintenance, stormwater and erosion and sediment controls, and stabilization and restoration of slopes. He has completed bench-scale tests, treatability studies, feasibility studies, alternatives evaluations, field pilot tests. Glenn has also designed, installed, operated and maintained full-scale treatment systems.

Gunnar Emilsson, PG, PE, PMP – Quality Review Team
Gunnar is CDM Smith's Mined Land Restoration Discipline Leader with more than 35 years of experience performing and managing environmental and engineering investigations, designs, and remedial actions, specializing in the closure of large, complex mining and smelting sites. He is currently working on remedial design and action in large areas of land reclamation and waste closures for the Anaconda Smelter NPL Site, as well as serving as lead practitioner for the remedial design of the Gilt Edge Superfund, an inactive cyanide heap leach gold mine in western South Dakota. Prior to joining CDM Smith, Gunnar served as a mining engineer for the Montana Department of Environmental Quality, where he directed geotechnical investigations to analyze slope stability of tailings dams and open pit highwalls, performed engineering and geotechnical analyses under the National Environmental Policy Act (NEPA), and calculated reclamation performance bonds for hard rock mines throughout the state.

Mining and Reclamation Discipline Leadership

Nick Anton, PE – Mine Reclamation Discipline Lead
Nick is a senior mining engineer and **Registered Professional Civil Engineer in West Virginia (WV PE #027294)** with 20 years of experience specializing in groundwater, surface water, soil remediation, and in particular, the storage and treatment of mining influenced water (MIW), geochemistry of mine wastes and MIW, the remediation of mine waste materials associated with active and abandoned mines, and mine land reclamation. He has been involved in nearly all of CDM Smith's mining projects during the past two decades, during which time his experience has included construction oversight and management; water treatment system design; mine waste and acid mine drainage characterization, storage, management and treatment; feasibility studies, treatability studies, and pre-design investigations; report writing for investigations, studies, and designs, and other technical reporting.

Winston Parker, PE – Hydraulics and Hydrology Discipline Lead
Winston is a **Registered Professional Engineer in West Virginia (WV PE#027424)** with 10 years of engineering and construction experience on mine sites. His work has included water and wastewater treatment, impacted sediment analysis and water treatment plant operation, technical review, and hydrologic and hydraulic (H&H) design and modeling for mining clients. He has been the civil, hydrologic, and hydraulic design lead on numerous analyses for mine sites, channel designs, and model developments across the US, including the Asarco Ray Mine & Big Box Lake, Dicaperl El Grande and Soccoro Mines, and the Rio Tinto Holden Mine.

Gregory Sanders, PE – Geotechnical Engineering Discipline Lead
Greg has 24 years of experience in geotechnical and tunnel engineering, including extensive work performing geotechnical investigations and designs for tunnels, micro-tunneling, horizontal directional drilling (HDD), dams, levees, pipelines, solid waste landfills, and water and wastewater treatment plants, as well as at mining sites. His notable mining experience includes projects at the abandoned Formosa Mine Superfund Site in Oregon; a slope stability assessment at the Mayflower Mine site in Colorado's Bonita Peak Mining District; a geotechnical assessment of the Klau and Buena Vista Mines Superfund Site in California; and assistance with the drilling program and design of a new quarry site for the Successor Coeur d'Alene Custodial and Work Trust in Idaho. He also performed a stability analysis on tailings piles and a concrete dam at the Iron King Mine Superfund Site in Arizona to determine if modifications would be required to stabilize the site prior to future reclamation efforts. Additionally, performed detailed mine evaluations of five large underground and surface mining operations in the southeast United States.

Trent Thomas, PE – Civil Engineering Discipline Lead
Trent is a civil engineer and **Registered Professional Engineer in West Virginia (WV PE#027431)** with 10 years of experience in environmental engineering, construction management and oversight. His experience includes civil design for infrastructure expansion and bridge replacements, hydrology and hydraulic analysis of drainage basins, wastewater system design, and mine subsidence closure design, as well as large-scale restoration design and reclamation. Additionally, he has provided field oversight of construction and reclamation projects. Trent has assisted in closure designs, cost estimates, coordination with subcontractors, field inspections, and field oversight of construction activities on several Teck American Legacy Properties mine sites, as well as engineering designs at the Rio Tinto Holden Mine in Washington.

Dustin Klempel, PE – Water Treatment Process Discipline Lead
Dustin is a chemical engineer with 20+ years of experience in the chemical, process, and environmental engineering fields with a focus on the oil, gas and mining industries. His experience includes industrial wastewater and remediation treatment system design; bench and pilot scale testing; field engineering during construction; and facility startup and operation. He has performed numerous process designs for industrial wastewater treatment systems, including an industrial wastewater treatment facility to handle acid mine drainage in Montana.

Devin Wilson, PWS, CPESC, CESSWI, ENV SP – Natural Resources/Wetlands
Devin is an environmental scientist, regulatory specialist, and restoration ecologist with more than 25 years of experience recommending ways to construct projects more in-tune with nature, which has helped facilitate the design and environmental permitting of a vast array of environmental, water, energy, and transportation projects. His field experience includes wetland delineations and habitat assessments, stream stability assessments, erosion and sediment control inspections, as well as other environmental investigations and sampling of subject sites. Devin provided review of vegetation sampling methodology, as well as annual vegetation sampling and erosion reports, and is currently providing technical review and comments on plant establishment, invasive species, and erosion and sediment control at the Midnite Mine Superfund Site in Wellpinit, WA. Additionally, he recently was the lead environmental scientist for two AML ecological services contracts for the Ohio Department of Natural Resources.

Additional Disciplines

Stephen Dunn – Process Engineering
Stephen is a chemical engineer with 9 years of experience as a process design engineer to size and select equipment, size piping, select valves and instrumentation, and generate AutoCAD drawings for new and existing facilities. He also has experience working in pharmaceutical, microelectronic solutions, and Process Safety Management (PSM) covered manufacturing. He has designed cooling water circulation and process waste removal systems for new and existing facilities. Recently, Stephen led the design for the Gas-Chemical Slurry building at a chip manufacturing facility in Texas and assisted in report writing for the compliance prior to facility start-up. Additionally, he conducted an assessment of an existing system in Ohio to help a chemical company achieve compliance with water pollution requirements. He also led PSM and RMP compliance efforts for a pharmaceutical/microelectronic chemical company in Kentucky.

Joseph Zanotti, PE – Structural
Joe is a **Registered Professional Engineer in West Virginia (WV PE#026422)** with 39 years of experience in structural design, construction, and restoration of canals, dams, drainage structures, retaining walls, industrial and chemical facilities, wastewater treatment plants and sanitary structures, public transit facilities, and more. His field experience includes structural condition surveys, testing, evaluation, and repair of many types of deteriorated steel, concrete and precast concrete buildings and structures.

Kip Hall, PE – Construction Manager
Kip is a **Registered Professional Engineer in West Virginia (WV PE#15176)** and the leader of CDM Smith's construction engineering inspection services team in our Charleston, WV office. He has dedicated his career to the engineering and construction of civil infrastructure, primarily roadways and bridges, with extensive experience throughout West Virginia. Kip recently managed the construction inspection of the $215 million rehabilitation of 26 bridges along the I-70 corridor and replacement of the Fulton Bridge, located just to the east of the Wheeling Tunnel, in Ohio County, WV. He is currently managing multiple task orders under WVDOH's Statewide and District Specific Construction Inspection Services contract.

Stephen Dent, PhD – Geochemical and Mining Scientist
Stephen has 18 years of experience designing, implementing, and evaluating data from monitoring programs involving impacted sediment sites. He is a leading expert on monitoring impacts, with a focus on lake management and mine site investigations and permitting. His expertise spans across fate and transport, as well as engineered water quality improvements projects that require the monitoring of nutrients and metals. He works in both active open pit mining properties and abandoned mine sites.

Kent Whiting, LG – Geologist
Kent is an aqueous geochemist with 30 years of experience in the environmental field. He has worked on projects at a variety of environmental sites, including current and former mining, wood-treating, foundry, landfill, underground storage tank (UST), and miscellaneous industrial sites. His responsibilities have included designing and conducting treatability studies, planning sampling programs, leading sampling teams in the field, geochemical modeling, database management, and multivariate and landfill statistical evaluations. Kent is experienced in the use of passive treatment technology for the reclamation of acid mine drainage. He has acted as a passive treatment expert for EPA and has provided technical support during negotiations with the potentially responsible party (PRP). His experience has included conceptual design, substrate selection for pilot-scale systems, interpretation of cell performance, and operational modifications for numerous passive water treatment systems. Kent has also performed a large number of studies and investigations at former mining sites,

Felipe Contreras, PE, CME, CFM – Floodplain Manager
Felipe is a civil engineer and Certified Floodplain Manager. He has 25 years of experience in integrated water resources management, specializing in the design and construction management of water treatment and distribution systems, wastewater treatment and collection systems. He has managed and designed a wide range of civil infrastructure improvements, including utility relocations, flood recovery projects, and dredging projects for soil erosion and sediment control.

John Paravati – Rights-of-Way and Easements
John has spent his entire 38-year career at CDM Smith specializing in the development and monitoring the quality of CADD files and drawings for civil and structural engineering-related design projects (plans, specifications, and estimates; right-of-way (ROW); erosion and sediment pollution control; maintenance and protection of traffic, signing and pavement marking; and drainage). He is responsible for creating and monitoring CADD standards for CDM Smith offices in Pennsylvania and for various clients such as the Pennsylvania Department of Transportation (PennDOT), Pennsylvania Turnpike Commission (PTC), and Urban Redevelopment Authority (URA). He recently was the lead designer for the Gap ROW plan and Final ROW plan for the I-95 Section BS5 project for PennDOT in Philadelphia, PA, and has designed ROW plans for several other PennDOT projects.

Subconsultant Services

In addition to our in-house staff, we are supplementing our team with Triad Engineering to provide specialty services and bring additional value to your projects. CDM Smith has a well-established history of collaboration with Triad Engineering on projects in West Virginia.

Triad Engineering - Surveying and Drilling

CDM Smith proposes Triad Engineering to provide surveying, material testing, drilling, and sampling. Our firms have been working together since 2008. Triad has been providing professional survey services on West Virginia projects for almost 45 years. They have surveyed every county in West Virginia, as well as performed numerous large-scale surveys for other State agencies. Triad's staff of nearly 200 is located within nine offices, including locations in Scott Depot and Morgantown, WV. Their well-equipped, modern state-of-the-art materials testing laboratories are maintained in every office to support engineering and construction related projects. These laboratories are staffed by experienced technicians with the applicable state agency certifications and working under the supervision of professional engineers. Materials tested include soil, concrete, aggregate, asphalt, and rock. Their testing labs routinely participate in national quality control programs administered by AMRL and CCRL, which follow AASHTO and ASTM testing procedures.

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

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
WVDEP/AML Program Solicitation # CEOI 0313 DEP 2600000001	20 August 2025	04-2473560

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
CDM Smith Inc.	75 State Street, Suite 701, Boston, MA 02109	CDM (merged with Wilbur Smith Associates in 2011 and became CDM Smith Inc)

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)
617-452-6000	1947	Corporation	NO

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

500 Lee Street East, Suite 410, Charleston, WV 25301 / 304-345-2339 / Kyle B. Hall, PE / 7 personnel

We have additional local and regional engineering offices that support mining and large civil projects with staff available to support this contract, including in VA, OH, and PA.

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS
Timothy B. Wall, Chairman/CEO; 617-452-6000 Anthony B. Bouchard, President/COO; 617-452-6000	Thierry Desmaris, Exec. VP, Finance & Acquisitions; 617-452-6000 Julia B. Forgas, Exec. VP, Marketing & Communications; 617-452-6000

9. PERSONNEL BY DISCIPLINE

311 ADMINISTRATIVE	11 ECOLOGISTS	25 LANDSCAPE ARCHITECTS	210 STRUCTURAL ENGINEERS
74 ARCHITECTS	15 ECONOMISTS	111 MECHANICAL ENGINEERS	— **SURVEYORS**
23 **BIOLOGIST**	281 ELECTRICAL ENGINEERS	4 **MINING ENGINEERS**	242 TRAFFIC ENGINEERS
289 **CADD OPERATORS**	958 ENVIRONMENTALISTS	— PHOTOGRAMMETRISTS	3,093 OTHER
53 CHEMICAL ENGINEERS	63 ESTIMATORS	213 PLANNERS: URBAN/REGIONAL	
608 **CIVIL ENGINEERS**	208 **GEOLOGISTS**	48 SANITARY ENGINEERS	
362 CONSTRUCTION INSPECTORS	— HISTORIANS	— SOILS ENGINEERS	
— DESIGNERS	94 HYDROLOGISTS	28 SPECIFICATION WRITERS	6,939 TOTAL PERSONNEL
— DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 3 in Primary + 6 in Other Offices
***RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.**

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

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

NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
Triad Engineering, Inc. 1097 Chaplin Road Morgantown, WV 26501	Surveying and Drilling	_X___ Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____Yes No

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

YES Description and Number of Projects: CDM Smith staff has technical expertise in providing mine reclamation engineering and construction oversight on dozens of mine restoration and reclamation projects. This includes Abandoned Mine Lands (AML) projects with States, U.S. Forest Service, and the Bureau of Land Management. We have also provided engineering and construction oversight on mine projects led by the Environmental Protection Agency (EPA) as well as State-led Superfund projects requiring significant restoration from mine impacted soil and water. CDM Smith also has mine reclamation engineering experience with private clients in pre-mine permitting, mine planning and operations, and closure phases. In addition to mine reclamation projects where CDM Smith has provided engineering and construction oversight services, we have provided construction oversight on a number of mine sites where the responsible party developed design and implemented construction.

NO

B. Is your firm experienced in Soil Analysis?

YES Description and Number of Projects: CDM Smith has performed soil analysis as a component of thousands of projects, including mining reclamation and restoration sites, and in support of water quality and design projects. We have managed sites with mine impacted soil and water for a range of federal, public, and industrial clients. CDM Smith is well versed in standard soil laboratory total metals analyses, field x-ray fluorescence (XRF), leachability methods, acid-base accounting, agronomic methods, and a variety of geotechnical analyses. We have applied acid-base accounting analysis to calculate alkaline amendment rates to treat soils impacted by acidic mining wastes. We have a geotechnical laboratory that services our clients, as well as soil processing facilities in offices across the country. We also have three (3) treatability laboratories, where we perform treatability studies on subjects such as passive and active mining-influenced water treatment, soil sorption with various media, and leaching.

NO

C. Is your firm experienced in hydrology and hydraulics?

YES Description and Number of Projects: CDM Smith has performed thousands of hydrology and hydraulic design and modeling projects. This has included mine-impacted water, wastewater and stormwater projects. Designs have included site survey using conventional, GPS, and UAV surveying techniques, hydrologic modeling using continuous and event-based approaches in Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS) and EPA's Storm Water Management Model (SWMM), and hydraulics modeling using Hydraulic Engineering Center's River Analysis System (HEC-RAS). CDM Smith has designed and sized countless outlet structures, culverts, bridges, channels, riprap revetments, and pumping systems. Other water resources design projects have included FEMA no-rise certifications or CLOMR/LOMR submittals, two-dimensional (2D) HEC-RAS unsteady flow, dam break and sediment transport analyses, and alternatives and feasibility analyses. CDM Smith staff is proficient with many H&H and accompanying software programs including HEC-HMS, EPA SWMM, HEC-RAS, HydroCAD, CulvertMaster, FHWA Hydraulic Toolbox, ArcMap with HEC-GeoHMS and HEC-GeoRAS, Autodesk Civil 3D, AFT Fathom and Impulse, and more.

NO

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

YES Description and Number of Projects: CDM Smith owns and operates our own drones with licensed pilots that can be equipped with a variety of remote sensing devices. These can include devices to collect color imagery, topography, thermal and hyperspectral imagery. Our staff processes this data and uploads to software for project use, such as AutoCAD, ArcGIS, and various hydrology and hydraulics software. CDM Smith has deployed drones at projects across the United States to collect data for wetland delineation, investigation and design-level topographic data, aerial imagery, hyperspectral imagery, and thermal imagery. We have successfully implemented revegetation surveys at reclaimed sites as a more accurate and faster alternative to only ground-based vegetation surveys.

NO

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

YES Description and Number of Projects: CDM Smith has performed thousands of domestic waterline design projects worldwide. At mine sites, we have provided groundwater investigation planning, implementation, and evaluation services for a number of EPA and State-led Superfund sites, state AML sites, and private clients. We have provided remedial investigation (RI) lead services for a number of large and complex mining district superfund sites, including the Silver Bow Creek/Butte Area (MT), Barker Hughesville (MT), Tenmile (MT), Bunker Hill (ID), Clear Creek/Central City (CO), and Bonita Peak (CO). We have provided services at these sites and a number of others to investigate and map underground workings and design drilling programs to intersect workings and/or adjacent areas to characterize impacts from surface mine waste sources and underground mine workings. CDM Smith has also implemented treatability studies and provided designs to treat contaminated mining-influenced groundwater and resulting surface water springs or adit discharges. These sites have significant impacts groundwater and related surface water systems that require extensive and lengthy investigations to characterize groundwater impacts, develop feasibility studies to restore and/or contain groundwater, and provide remedial design to treat and/or manage groundwater. Some of these sites have also involved investigations and design of alternative public water supply systems or point of use systems for drinking water users, such as the Tenmile Mining District Superfund Site. Most sites either have in place or will require institutional controls to manage groundwater use and protect human health until or if groundwater can be restored for public use.

NO

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

YES Description and Number of Projects: CDM Smith has completed many acid mine drainage (AMD) and more neutral mining-influenced water (MIW) evaluation and abatement design projects. Notably, CDM Smith designed and constructed the first full-scale plant to treat acid mine drainage at the 2010 Design-Build Institute of America (DBIA) award-winning Upper Blackfoot Mining Complex in Montana. Other significant AMD active treatment designs include water treatment plants for the Gilt Edge Mine Superfund Site (SD) and Mike Horse Mine (MT) and water treatment at Upper Tenmile Mining Area Superfund Site. CDM Smith operated an existing AMD treatment facility at the Gilt Edge Mine for over a decade, followed by full-scale design, construction, and commissioning of an AMD treatment plant for the site remedy. At Tenmile, CDM Smith operated an AMD treatment facility for Luttrell Repository leachate for nearly two decades, followed by development of a full-scale passive treatment design for the same AMD source. CDM Smith has implemented passive treatability studies for acidic and/or circumneutral MIW at several Superfund sites in the Western US as well as for private clients. Passive treatability studies have been implemented at Clear Creek/Central City (CO), Bonita Peak (CO), Blue Ledge (CA), Barker Hughesville (MT), Tenmile (MT), Bunker Hill (ID), Formosa (OR), and Gilt Edge (SD). In addition to treatability studies and design work, CDM Smith has provided oversight services for design and construction of AMD treatment plants at several mine sites, including Silver Bow Creek (MT) and Midnite Mine (WA).

NO

G. Is your firm experienced in construction oversight?

YES Description and Number of Projects: CDM Smith has been providing construction management and oversight for more than 50 years including in West Virginia. At mine sites, we have implemented reclamation construction by working directly with mining company crews, by procuring construction subcontractors, and by using our own internal construction capabilities to provide timely and cost-effective design-build projects. Additionally, we have provided post-closure inspections and monitoring, and our operations and maintenance personnel have provided fully licensed operations, planning, training, consulting and maintenance of operating facilities. Recent examples of our construction oversight at mine sites include the Silver Bow Creek/Butte Area Superfund Site (MT), the Red Lodge East Bench Coal Repository Reclamation Project (MT), the Captain Jack Mine and Mill (CO), the California Gulch Superfund Site (CO), the Anaconda Smelter Superfund Site (MT), the Midnite Mine (WA), the Upper Tenmile Creek Mining Area (MT), the Bunker Hill Mining and Metallurgical Complex (ID), and the Gilt Edge Mine (SD).

NO

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Hall, Kyle B.; Principal-in-Charge	3	15	3

Brief Explanation of Responsibilities

Kyle is an expert in the successful implementation of heavy civil engineering projects in West Virginia, having spent 33 years at WVDOH before joining CDM Smith. He held key positions in administration, management, and construction inspection during his tenure at WVDOH, and has brought that expertise to project implementation at CDM Smith. He is Registered Professional Engineer in West Virginia (WV PE #012755). Kyle provides project management and construction management services, as well as client service, on a variety of projects in West Virginia.

EDUCATION (Degree, Year, Specialization)

BS, Civil Engineering, West Virginia University Institute of Technology, 1989

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
N/A	PE, 1995, West Virginia

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Opem, Richard P.; Project Manager	3	30	0

Brief Explanation of Responsibilities

Rich is a civil and environmental engineer, and Registered Professional Engineer in West Virginia (WV PE #024243). He has spent his 35-year career specializing in reclamation, restoration and impacted water treatment. His experience includes waste studies, designs, and construction, water treatment plans and designs, and permitting and compliance. He is currently managing a project to address impacted soil and water at the Hanlin Allied Olin Superfund Site in Moundsville, WV.

EDUCATION (Degree, Year, Specialization)

MS, Civil and Environmental Engineering, Virginia Polytechnic Institute and State University, 2005
BS, Civil Engineering, George Washington University, 1989

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Member, American Society of Civil Engineers; Member, Engineers Without Borders; Member, Society of American Military Engineers; Member, Project Management Institute; Technical Liaison for Recruiting, Virginia Tech	PE, 2020, West Virginia; PE, 1996, Virginia

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Smith, Timothy N.; Project Manager	0	19	3

Brief Explanation of Responsibilities

Tim has 19 years of engineering experience in West Virginia and is a Registered Professional Engineer in West Virginia (WV PE #019760). He has a proven and demonstrated track record with engineering design standards and procedures. Prior to joining CDM Smith, Tim served WVDOH in various capacities. His responsibilities included preparing scopes of work, Initial Engineer's Estimates (IEE), negotiation memos, etc. Tim previously served the WVDOH within the Traffic Engineering Division and the In-House Design Unit of the Engineering Division. Tim understands what it takes to effectively manage large engineering projects in West Virginia.

EDUCATION (Degree, Year, Specialization)

BS, Civil Engineering, West Virginia Institute of Technology, 2006

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
N/A	PE, 2012, West Virginia

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Silver, Cannon F.; Quality Review Team	10	30	0

Brief Explanation of Responsibilities

Cannon has 30 years of experience leading site investigations, feasibility studies, technology evaluations, designs, construction oversight, treatment system operations and maintenance. He recently managed an assessment of BHP's legacy mine assets within Canada and the United States to help BHP prioritize the risks across its nine legacy operations and identify actionable measures for improvements.

EDUCATION (Degree, Year, Specialization)

MS, Environmental Engineering and Science, Stanford University, 1994
BS, Engineering Sciences, Harvard University, 1993

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Member, Interstate Technology and Regulatory Council (ITRC); Committee Member, ASTM International	PE, 2012, Virginia; PE, 2012, Ohio; PE, 1998, Utah

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 16	YEARS OF AML RELATED DESIGN EXPERIENCE: 28	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 10

Brief Explanation of Responsibilities

Glenn is a civil engineer and an expert in addressing impacted soil and treating water. He is a Registered Professional Engineer in West Virginia (WV PE #027307) with 28 years of engineering experience. Glenn has managed numerous engineering projects at both active and abandoned mine sites throughout the United States. This has included reclamation and restoration activities, construction management, construction oversight, stream and habitat restoration, wetlands, treatment of mine-impacted soil and water, drainage controls, engineering designs for active and passive treatment systems as well as operation and maintenance, stormwater and erosion and sediment controls, and stabilization and restoration of slopes. He has completed bench-scale tests, treatability studies, feasibility studies, alternatives evaluations, field pilot tests. Glenn has also designed, installed, operated and maintained full-scale treatment systems.

EDUCATION (Degree, Year, Specialization)

BS, Bioenvironmental Engineering, Rutgers University, 1997

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Member, National Ground Water Association (NGWA); Member, Interstate Technology and Regulatory Council (ITRC)	PE, 2003, Virginia; PE, 2025, West Virginia; PE, 2003, Pennsylvania; PE, 2013, Georgia; PE, 2013, S. Carolina; PE, 2018, Texas

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 35	YEARS OF AML RELATED DESIGN EXPERIENCE: 35	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Brief Explanation of Responsibilities

Gunnar is CDM Smith's Mined Land Restoration Discipline Leader with more than 35 years of engineering experience performing and managing environmental and engineering investigations, designs, and remedial actions, specializing in the closure of large, complex mining and smelting sites. Prior to joining CDM Smith, Gunnar served as a mining engineer for the Montana Department of Environmental Quality, where he directed geotechnical investigations to analyze slope stability of tailings, dams, and open pit highwalls, performed engineering and geotechnical analyses under the National Environmental Policy Act (NEPA), and calculated reclamation performance bonds for mines.

EDUCATION (Degree, Year, Specialization)

MS, Geophysical Engineering, Montana College of Mineral Science and Technology, 1991
BS, Geological Engineering, Montana College of Mineral Science and Technology, 1984

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
N/A	PE, 1991, Montana; PE, 1992, Wyoming

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Anton, Nicholas R.; Discipline Lead: Mine Reclamation	18	20	0

Brief Explanation of Responsibilities

Nick is the lead engineer for mine characterization, reclamation design, and water treatment. He is a Registered Professional Engineer in West Virginia (WV PE #27294). He has 20 years of engineering experience and has been involved in nearly all of CDM Smith's mining projects during the past two decades. He is well versed in land reclamation (geomorphic) design, site revegetation and erosion control best management practices, cover systems, repositories, leachate collection systems, mine waste and acid mine drainage characterization, storage, management, and treatment, and geochemistry of mine wastes and mine-impacted water.

EDUCATION (Degree, Year, Specialization)

MS, Environmental Engineering, New Mexico Institute of Mining and Technology, 2005
BS, Chemical Engineering, Michigan Technological University, 2002

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Reclamation Sciences	PE, 2025, West Virginia; PE, 2008, Colorado; PE, 2017, Montana; PE, 2025 Indiana

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Thomas, Trent B.; Discipline Lead: Civil Engineering	10	10	2

Brief Explanation of Responsibilities

Trent is a civil engineer and Registered Professional Engineer in West Virginia (WV PE #027431). He has 10 years of experience in civil engineering, construction management and construction oversight on mine sites. Trent has assisted in closure designs, cost estimates, coordination with subcontractors, field inspections, and field oversight of construction activities on several mine sites. He also designs treatment solutions for mine-impacted water. His work has included water treatment plant operation, technical review, and hydrologic and hydraulic design on mine sites.

EDUCATION (Degree, Year, Specialization)

BS, Civil Engineering, Montana Tech – University of Montana, 2014

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
N/A	PE, 2025, West Virginia; PE, 2021, Montana

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Wilson, Devin; Discipline Lead: Natural Resources/Wetlands	2	25	0

Brief Explanation of Responsibilities

Devin is an environmental scientist, regulatory specialist, and restoration ecologist with more than 25 years of AML related experience. He was the lead environmental scientist for two AML projects for the Ohio Department of Natural Resources that were completed in the past year. He recommends ways to construct projects more in-tune with nature, which has helped facilitate the design and environmental permitting of a vast array of mining, environmental, water, energy, and transportation projects. His field experience includes wetland delineations and habitat assessments, stream stability assessments, erosion and sediment control inspections, as well as other environmental investigations and sampling of sites.

EDUCATION (Degree, Year, Specialization)

BS, Agriculture, Natural Resources and Environmental Science, Kansas State University, 1996

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Member, American Society of Reclamation Services; Member, International Erosion Control Association, Great Rivers Chapter; Member, Society of Wetland Scientists (Central Chapter President, 2010-2011)	PWS, 2014; CPESC, 2009; CESSWI, 2023; ENV SP, 2014

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Sanders, Gregory W.; Discipline Lead: Geotechnical Engineering	19	19	19

Brief Explanation of Responsibilities

Greg has 24 years of experience in geotechnical engineering. This includes extensive geotechnical investigations and designs for mining sites, tunnels, dams, levees, pipelines, waste piles, and water and wastewater treatment plants. His notable mining experience includes projects at the abandoned Formosa Mine Superfund Site in Oregon; a slope stability assessment at the Mayflower Mine site in Colorado’s Bonita Peak Mining District; a geotechnical assessment of the Klau and Buena Vista Mines Superfund Site in California; and assistance with the drilling program and design of a new quarry site for the Successor Coeur d’Alene Custodial and Work Trust in Idaho. He also performed detailed mine evaluations of five large underground and surface mining operations in the southeastern United States.

EDUCATION (Degree, Year, Specialization)

MS, Civil Engineering, Kansas State University, 2009
BS, Geological Engineering, University of Missouri at Rolla, 2001

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Member, American Society of Civil Engineers; Member, Society for Mining, Metallurgy and Exploration	PE, 2007, Kansas; PE, 2018, Illinois; PE, 2017, Nebraska; PE, 2009, Missouri; PE, 2011, Texas

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Parker, Winston S.: Discipline Lead: Hydraulics and Hydrology	10	10	0

Brief Explanation of Responsibilities

Winston is a Registered Professional Engineer in West Virginia (WV PE #027424) with 10 years of engineering and construction experience. His work has included water and wastewater treatment, site impacted sediment analysis and water treatment plant operation, technical review, and hydrologic and hydraulic (H&H) design and modeling for mining clients. He has been the civil, hydrologic, and hydraulic design lead on numerous analyses for mine sites, channel designs, and model developments across the US, including the Asarco Ray Mine & Big Box Lake, Dicaperl El Grande and Soccoro Mines, and the Rio Tinto Holden Mine.

EDUCATION (Degree, Year, Specialization)

BS, Civil Engineering, Montana State University, 2014

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
N/A	PE, 2025, West Virginia; PE, 2021, Montana

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Klempel, Dustin T.; Discipline Lead: Water Treatment Process	15	22	1

Brief Explanation of Responsibilities

Dustin is a chemical engineer with significant experience in the chemical, process, and environmental engineering fields with a focus in the oil, gas and mining industries. His experience includes industrial wastewater and treatment system design; bench and pilot scale testing; field engineering during construction; and facility startup and operation. Dustin has performed numerous process designs for water treatment systems. His activities include performing treatability tests and on-site pilot tests, general process engineering, process design, equipment specification, and plans and specifications preparation.

EDUCATION (Degree, Year, Specialization)

BS, Chemical Engineering, Montana State University, 2003

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Member, American Institute of Chemical Engineering; Member, Engineers Without Borders	PE, 2009, Montana

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 7	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
Dunn, Stephen; Process Engineering			

Brief Explanation of Responsibilities
Stephen has 9 years of experience as a process design engineer to size and select equipment, size piping, select valves and instrumentation, and generate AutoCAD drawings for new and existing treatment systems. He has designed and updated process waste removal systems for new and existing facilities.

EDUCATION (Degree, Year, Specialization)
BS, Chemical Engineering, Cleveland State University, 2016

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		
	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 20	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
Zanotti, Joseph; Structural Engineering			

Brief Explanation of Responsibilities
Joe has 39 years of experience in structural design, construction, and restoration of canals, dams, drainage structures, retaining walls, industrial and chemical facilities, wastewater treatment plants and sanitary structures, public transit facilities, and more. His field experience includes structural condition surveys, testing, evaluation, and repair of many types of deteriorated steel, concrete and precast concrete buildings and structures.

EDUCATION (Degree, Year, Specialization)
BS, Civil Engineering, Pennsylvania State University, 1980

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Member, American Society of Civil Engineers Member, American Concrete Institute Member, International Concrete Repair Institute	PE, 1996, West Virginia; PE, 2013, Virginia; PE, 2003, Ohio; PE, 1989, Pennsylvania; PE, 1987, Illinois

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 2	YEARS OF AML RELATED DESIGN EXPERIENCE: 20	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Hall, Kip R.; Construction Manager

Brief Explanation of Responsibilities

Kip is the leader of CDM Smith's construction engineering inspection services team in our Charleston, WV office. He has dedicated his career to the engineering and construction of civil infrastructure, primarily roadways and bridges, with extensive experience throughout West Virginia. Kip recently managed the construction inspection of the $215 million rehabilitation of 26 bridges along the I-70 corridor and replacement of the Fulton Bridge, located just to the east of the Wheeling Tunnel, in Ohio County, WV. He is currently managing multiple task orders under WVDOH's Statewide and District Specific Construction Inspection Services contract.

EDUCATION (Degree, Year, Specialization)

BS, Civil Engineering, West Virginia Institute of Technology
AS, Electrical Engineering Technology, West Virginia Institute of Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
N/A	PE, 2002, West Virginia; PE, 2013, Ohio

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 12	YEARS OF AML RELATED DESIGN EXPERIENCE: 12	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Dent, Stephen R.; Geochemical and Mining Scientist

Brief Explanation of Responsibilities

Stephen has 18 years of experience designing, implementing, and evaluating data from monitoring programs involving impacted sites. He is a leading expert on large-scale restoration of impacted sites, with a focus on lake management and mine site investigations and permitting. His expertise spans across fate and transport of metals, as well as engineered water quality improvements projects that require the monitoring of nutrients and metals. He works in both active open pit mining properties and abandoned mine sites.

EDUCATION (Degree, Year, Specialization)

PhD, Civil Engineering, Washington State University, 2012;
MS, Environmental Engineering, Montana Tech of the University of Montana, 2005;
BS, Environmental Engineering, Montana Tech of the University of Montana, 2003

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Member, Pacific Northwest International Section of the Air and Waste Management Association (PNWIS of AMWA); Member, The Society for Environmental Toxicology and Chemistry (SETAC); Member, North American Lake Management Society (NALMS)	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		
	YEARS OF AML DESIGN EXPERIENCE: 12	YEARS OF AML RELATED DESIGN EXPERIENCE: 25	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0

Brief Explanation of Responsibilities

Kent is an aqueous geochemist with 30 years of experience in the environmental field. He has worked on projects at a variety of environmental sites, including current and former mining, wood-treating, foundry, landfill, underground storage tank (UST), and miscellaneous industrial sites. His responsibilities have included designing and conducting treatability studies, planning sampling programs, leading sampling teams in the field, geochemical modeling, database management, and multivariate and landfill statistical evaluations. He is experienced in the use of passive treatment technology for the remediation of acid mine drainage.

EDUCATION (Degree, Year, Specialization)

MS, Geochemistry, Colorado School of Mines, 1992
BS, Geology, Ohio State University, 1988

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
N/A	LG, 2007, Washington

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 25	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 11

Brief Explanation of Responsibilities

Felipe is a civil engineer and Certified Floodplain Manager. He has 25 years of experience in integrated water resources management, specializing in the design and construction management of water treatment and distribution systems, wastewater treatment and collection systems. He has managed and designed a wide range of civil infrastructure improvements, including utility relocations, flood recovery projects, and dredging projects for soil erosion and sediment control.

EDUCATION (Degree, Year, Specialization)

MSc., Hydraulic Resources, University of Los Andes, 2000
BS, Civil Engineering, University of Los Andes, 1999

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers (ASCE), National Society of Professional Engineers (NSPE), Association of State Floodplain Managers (ASFPM), American Water Works Association (AWWA), Water Environmental Federation (WEF)	PE, 2020, Pennsylvania; PE, 2011, New Jersey

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Paravati, John; Rights-of-Way and Easements	0	30	0

Brief Explanation of Responsibilities

John has spent his entire 38-year career at CDM Smith specializing in the development and monitoring the quality of CADD files and drawings for civil and structural engineering-related design projects (plans, specifications, and estimates; right-of-way (ROW); erosion and sediment pollution control; maintenance and protection of traffic, signing and pavement marking; and drainage). He is responsible for creating and monitoring CADD standards for CDM Smith offices in Pennsylvania and for various clients such as the Pennsylvania Department of Transportation (PennDOT), Pennsylvania Turnpike Commission (PTC), and Urban Redevelopment Authority (URA). He recently was the lead designer for the Gap ROW plan and Final ROW plan for the I-95 Section BS5 project for PennDOT, and has designed ROW plans for several other PennDOT projects.

EDUCATION (Degree, Year, Specialization)

AAS, Specialized Technology, CAD Computer System Management, Pittsburgh Technical Institute, 2000
AAS, Specialized Technology, Computer Aided Graphing, Pittsburgh Technical Institute, 1986

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		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:

Brief Explanation of Responsibilities

EDUCATION (Degree, Year, Specialization)

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

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE AML DESIGN SERVICES
AutoCAD
AutoCAD Civil 3D
ArcGIS Pro
ArcGIS Online, Field Maps, and Survey 123
HEC-RAS
HEC-HMS
HydroCAD
Leapfrog
SpectIntact
Microsoft Office (Word, Excel, PowerPoint, Outlook, Teams)

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
WVDOH SW23/24 WO13-D7 – Various Projects; Various Locations, WV	WVDOH 1900 Kanawha Blvd. East Charleston, WV 25305	On-Call	Varies by project	Varies by project
WVDOH SW23-24 WO3 CEI-D2 – Various Projects; Various Locations, WV	WVDOH 1900 Kanawha Blvd. East Charleston, WV 25305	On-Call	Varies by project	Varies by project
I-79 Bridge Replacements Project, District 4; Marion and Monongalia Counties, WV	WVDOH 1900 Kanawha Blvd. East Charleston, WV 25305	Project management; construction inspection; quality control	$45,563,870	~10%
Upper Tenmile Creek Mining Area Superfund Site; Helena, MT	USEPA (2001-2020); Montana Department of Environmental Quality (2021-Present)	Engineering design and construction management	Varies by project (multiple projects since 2001)	Varies by project
Formosa Mine Superfund Site; Douglas County, OR	USEPA, Region 10 1200 Sixth Avenue, Suite 155 Seattle, WA 98101	Engineering design and construction management	Estimated approximately $45M; to be constructed.	Design Complete. Construction Pending
Anaconda Smelter Superfund Site; Deer Lodge Valley, MT	USEPA, Region 8 Wynkoop St. Denver, CO 80202	Oversight of PRP-lead remedial design/remedial action and engineering design and construction of several soil remediation projects	For remedial action construction completed by CDM Smith (oversight excluded) $1.5M	For construction completed by CDM Smith, 100%

TOTAL NUMBER OF PROJECTS:	TOTAL ESTIMATED CONSTRUCTION COSTS: $
Thousands – this table is a representative sample limited to mining projects and projects in West Virginia	This table is a representative sample from thousands of ongoing projects.

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
US 522 Northern Connector Design-Build Project, Berkeley Springs, WV	Survey services; initial and final review plans; geotechnical investigation; hydraulics, hydrology and permitting; utility relocations	WVDOH 1900 Kanawha Blvd., East Charleston, WV 25305	March 2027	$35,000,000	$2,021,667

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)
Mount Vernon Road Sidewalk, Putnam County, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	$708,018	2025	Yes (Ongoing)
Bridge Street Bridge Design Study, Charleston, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	N/A	2023	N/A
Caldwell Bridge Cultural Resources Project, Charleston, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	N/A	2022	N/A
King Coal Highway Plans Update, Charleston, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	N/A	2022	N/A
WV-2 Proctor to Kent, Mount Storm, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	N/A	2021	Yes (Ongoing)
Bluefield Interchange Light, Mercer County, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	$168,844	2022	Yes
Dingess Street Bridge Design, Logan, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	$10,522,000	2021	Yes
Anaconda Smelter Superfund Site, Deer Lodge Valley, MT	USEPA, Region 8 1595 Wynkoop St. Denver, CO 80202	Varies by project (many projects since 1984)	2020	Yes (Ongoing)

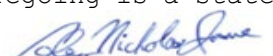
18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS CONSTRUCTION OVERSIGHT ON PROJECTS				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
Anaconda Smelter Superfund Site, Deer Lodge Valley, MT	USEPA, Region 8 1595 Wynkoop St. Denver, CO 80202	Varies by project (many projects since 1984)	2020	Yes (various projects)
Red Lodge East Bench Mine, Red Lodge, MT	Montana Department of Environmental Quality 2401 Colonial Dr. Helena, MT 59601	$2,102,500	2024	Yes
I-70 Bridges CEI Services, District 6, Ohio County, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	$215,000,000	2024	Yes
Beckley Widening Inspection, District 10, Raleigh County, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	$121,700,000	2024	Yes
WV Route 10 CEI, District 10, Mercer and Wyoming Counties, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	$80,000,000	2022	Yes
Raysal Arch Bridge Inspection, District 10, McDowell County, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305	$1,354,468	2023	Yes

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
US 35 – I-64 Interchange Quality Assurance Management, Charleston, WV	WVDOH 1900 Kanawha Blvd., East Charleston, WV 25305	$1,846,106	2025	Yes	TRC Engineers, Inc.
Route 10 Inspection Services, Charleston, WV	WVDOH 1900 Kanawha Blvd., East Charleston, WV 25305	$1,135,984	2022	Yes	TRC Engineers, Inc.
I-64 QC CEI, Charleston, WV	WVDOH 1900 Kanawha Blvd., East Charleston, WV 25305	$1,100,144	2025	Yes	Mead & Hunt
I-64 Widening and Improvements, Crooked Creek to Nitro WSA, Charleston, WV	WVDOH 1900 Kanawha Blvd., East Charleston, WV 25305	$608,777	2022	Yes	TRC Engineers, Inc.

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.
Please see CDM Smith's attached Statement of Qualifications for additional details about our experience working in West Virginia, our extensive project experience at mine sites, our project team's relevant experience and capabilities, and our approach to managing the work. Also, please see our attached proof of West Virginia COA.

21. The foregoing is a statement of facts.

Signature:  Title: Client Service Leader

Date: August 20, 2025

Printed Name: Glenn Nicholas Iosue, PE, BCEE

CDM Smith Inc.’s West Virginia Certificate of Authorization Status

Search: Details

Legal Name:	CDM SMITH, INC.
WV Company COA:	**COA Number**: C00792
	COA Status: Active
	COA Issue Date: 03/04/1994
	COA Expiration Date: 12/31/2025
Primary Address of Record:	75 STATE STREET SUITE 701 BOSTON, MA 02109
Engineer In Responsible Charge:	KYLE B. HALL
	PE License Number: 012755
	PE License Status: Active
	PE License Expiration: 12/31/2026

This data was retrieved on 8/12/2025.

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/ Management	Water Treatment	Active/Passive Water Treatment Systems	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Nicholas Anton, PE	Trent Thomas, PE	Gregory Sanders, PE	Winston Parker, PE	Dustin Klempel, PE	Devin Wilson, PWS	Stephen Dent, PhD	Kent Whiting, PG
Bonita Peak Mining District Superfund Site, San Juan County, CO	C/P		X	X	X	X					X	X	X	X	P		X	X	P	P	P	P	P	P	P	P
Clear Creek/Central City Superfund Site, Idaho Springs, CO	C/P	Yes	X		X	X					X	X	X	X	P/A		X		P	P		P				P
Captain Jack Mine Superfund Site, Boulder County, CO	C/P	Yes	X		X	X					X	X	X	X	P	X	X	X	P							
California Gulch Superfund Site, Leadville, CO	C/P	Yes	X			X					X		X					X	P							P
Lincoln Park/Cotter Superfund Sites, Canon City, CO	C		X	X	X	X	X			X		X			P/A	X	X	X								
Gilt Edge Mine Superfund Site, Lawrence County, SD	C/P	Yes	X	X	X	X					X	X	X	X	P/A	X	X	X	P		P					P
Upper Tenmile Creek Mining Area Superfund Site, Lewis and Clark County, MT	C/P	Yes	X	X	X	X					X	X	X	X	P/A	X	X	X	P	P			P			P
Iron Mask Mine, Broadwater County, MT	C/P		X								X					X	X	X	P							
Silver Bow Creek/Butte Area Superfund Site, Butte, MT	C/P	Yes	X	X	X	X					X	X	X	X	P/A	X	X	X	P	P	P	M/P	P	P	P	P
Town of Basin Superfund Site, Basin, MT	C		X			X					X	X	X		P	X	X	X								P
Anaconda Superfund Site, Anaconda, MT	C/P	Yes	X			X	X				X	X	X			X	X	X	P	P					P	P
Barker Hughesville Mining District Superfund Site, Monarch, MT	C/P		X		X	X						X	X	X	P	X	X	X	P						P	
Libby Asbestos Superfund Site, Libby, MT	C/P		X								X	X	X			X		X	P						P	P
Avoca Mine Site, Ireland	C/P		X		X	X	X		X	X	X	X	X	X	P	X	X	X	P							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"

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/ Management	Water Treatment	Active/Passive Water Treatment Systems	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Nicholas Anton, PE	Trent Thomas, PE	Gregory Sanders, PE	Winston Parker, PE	Dustin Klempel, PE	Devin Wilson, PWS	Stephen Dent, PhD	Kent Whiting, PG
Flat Creek/Iron Mountain Mine Superfund Site, Superior, MT	C/P																						P			
Red Lodge East Bench Coal Repository, Red Lodge, MT	C/P	Yes				X					X	X	X				X	X	P	M/P		P				
Bunker Hill Mining and Metallurgical Complex Superfund Site, Coeur d/Alene, ID	C/P	Yes	X	X	X	X					X	X	X	X	P	X	X	X			P	P				P
Midnite Mine Superfund Site, Wellpinit, WA	C/P	Yes	X			X	X				X	X	X	X	A	X	X	X	P	P		P		P		
Sharon Steel Tailings and Midvale Superfund Sites, Midvale, UT	C/P						X																			P
Black Butte Mine Superfund Site, Cottage Grove, OR	C/P	Yes	X			X					X	X	X			X	X		P	P					P	P
Formosa Mine Superfund Site, Riddle, OR	C/P		X	X	X	X					X	X	X	X	P	X		X	P	P	P	P			P	P
Blackjack and Bluebird Mine, Umatilla National Forest, OR	C/P		X			X						X		X	P				P							P
Blue Ledge Mine Superfund Site, Siskiyou National Forest, CA	C/P		X		X	X						X		X	P	X	X		P						P	
Klau/Buena Vista Mine Sites, San Louis Obispo, CA	C/P	Yes	X			X						X				X	X		P		P				P	
Newton County Mine Tailings Superfund Site, Granby, MO	C/P		X									X							P							
SW Jefferson County Mining Superfund Site, Jefferson County, MO	C/P		X			X						X							P							
Gategill Mine, United Kingdom	C/P					X					X	X		X	P				P							
Shymkent Smelter, Kazakhstan	C/P		X								X		X			X										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"

Appendix A: Resumes

- **Kyle Hall, PE** – Principal-in-Charge
- **Richard Opem, PE, PMP** – Project Manager
- **Timothy Smith, PE** – Project Manager
- **Cannon Silver, PE, PMP** – Quality Review Team
- **Glenn Iosue, PE, BCEE** – Quality Review Team
- **Gunnar Emilsson, PG, PE, PMP** – Quality Review Team
- **Nicholas Anton, PE** – Discipline Lead: Mine Reclamation Engineering
- **Trent Thomas, PE** – Discipline Lead: Civil Engineering
- **Devin Wilson, PWS, CPESC, CESSWI, ENV SP** – Discipline Lead: Natural Resources/Wetlands
- **Gregory Sanders, PE** – Discipline Lead: Geotechnical Engineering
- **Winston Parker, PE** – Discipline Lead: Hydraulics and Hydrology
- **Dustin Klempel, PE** – Water Treatment Process
- **Stephen Dunn** – Process Engineering
- **Joseph Zanotti, PE** – Structural Engineering
- **Kip Hall, PE** – Construction Manager
- **Stephen Dent, PhD** – Geochemical and Mining Scientist
- **Kent Whiting, LG** – Geologist
- **Felipe Contreras, PE** –Floodplain Manager
- **John Paravati** – Rights of Way/Easements

Kyle B. Hall, PE, PS

Principal-in-Charge

Kyle is an expert in the successful implementation of heavy civil engineering projects in West Virginia, having spent 33 years at WVDOH before joining CDM Smith. He held key positions in administration, management, and construction inspection during his tenure at WVDOH, and has brought that expertise to project implementation at CDM Smith. He is a Registered Professional Engineer in West Virginia (WV PE #012755). Kyle provides project management and construction management services, as well as client service, on a variety of projects throughout West Virginia.

Kyle has provided engineering design, permitting and construction oversight on projects that involved AML sites. This included the development of Corridor H where the roadway was built through multiple AML sites. Kyle worked directly with WVDEP's Office of AML&R.

Client Services for the West Virginia Department of Transportation, Eastern Federal Lands and KYOVA Projects. Kyle provides client services in transportation engineering for the West Virginia Department of Transportation, Eastern Federal Lands and KYOVA on various projects. The services include coordinating with the client for upcoming scheduled projects, developing interview proposals and fee proposals for project pursuits. Coordinating and tracking project pursuits and strategic planning.

Project Management and Construction Management/Support for the West Virginia Department of Transportation on various State and Federal Projects. Kyle provided Transportation Engineering Construction Management and Project Management services for the West Virginia Department of Transportation on various projects. The services included coordinating with the client and the contractor for all the scheduled project activities. This also included coordination of the contractor's CPM schedule and management of the project staffing provided to the client.

Prior to CDM Smith

West Virginia Department of Transportation, Department of Highways (WVDOH) Regional Construction Engineer Districts 4, 6, and 7. Kyle was responsible to work under an independent capacity in District 4, 6 and 7 in assisting in administering projects let to contract. He mediated project issues, negotiated claim settlements, and reviewed/approved change orders. He also served on task forces and committees; reviewed specifications and coordinated/set policy; reviewed future projects, including plans and proposals; evaluated bid tabs and planned training conferences. This position required a general knowledge of project schedules and requires the ability to make a workable decision for complex issues in administering contracts. This position also included assistance in staffing needs on projects through Contract Administration Division including where consultant inspection services may be necessary.

Major Projects with direct involvement as the Regional Construction Engineer:

Major Structures Project

- Wellsburg Bridge Design-Build Project

Education

BS – Civil Engineering
West Virginia University Institute of Technology (WVUTECH), 1989

Certifications

Professional Engineer
WV #12755

Professional Surveyor
WV #1573

Portland Cement Concrete Inspector
No. 0395

Portland Cement Concrete Technician
No. 0395

Hot Mix Asphalt Technician No. 0395

Compaction Inspector
No. 0395

Major Structures Project

- I-70 Bridges Project

Major Interstate Projects

- I-79 Exit 99 lane revisions and structure upgrade/widening/off ramp/interchange redesign with CEI Services
- I-79 South Fairmont – Pleasant Valley Project with CEI Services
- I-79 Interchange DB Project MP 153 with major structure and off ramp additions.
- Multiple I-79 Reconstruction/warranty projects

Major Projects

- Mileground-Airport widening project near Morgantown
- Multiple WV 2 two lane to four lane redesign grade, drain, pave and structures

West Virginia Department of Transportation, WVDOH Construction Engineer - District 8
Assistant Construction Engineer - District 8
Kyle was responsible for Administration of Highway Construction Projects from preconstruction to project completion and finalization. His responsibilities also included supervision of project inspectors and contractor activities for compliance with plans, specifications, and estimates, and participating in issue resolutions. As Construction Engineer, Kyle engaged in administering approximately 20 miles of new construction on Appalachian Corridor H project and construction of the Allegheny Highland Bicycle/Pedestrian Trail from Elkins to Thomas. Construction activities included 13 major grade, drain, pave and structures. Additionally, Kyle provided supervision for 35 WVDOH employees, and over 55 consultant inspection staff on various construction projects. **Kyle provided engineering design, permitting and construction oversight on this project where the roadway was built through multiple AML sites. He worked directly with WVDEP's Office of AML&R.**

West Virginia Department of Transportation, WVDOH Project Engineer - District 7.
Kyle served in the full capacity as the Project Engineer on various projects being administered by District 7 Construction. He was the Project Engineer on a major grade, drain, pave and structures project on Appalachian Corridor L Project on US Rte. 19. He was the Project Engineer on the Curtin Bridge and the Back Fork of Elk Bridge in Webster Co. He served as the chief field inspector and the office manager on a two major grade, drain, pave and structures projects on Appalachian Corridor H from the Buckhannon to the Randolph County line.

West Virginia Department of Transportation, WVDOH Summer Co-Op - District 7.
Kyle provided project inspection of bridge deck Repairs on I-79. Project inspection of embankment, drainage, base, pavement, shoulders, and concrete gutters. Inspection of traffic control devices. Construction Layout survey, final cross-sections, small drainage stake out and inspection of erosion and sediment control features.

Richard P. Opem, PE, PMP

Project Manager

Rich is a civil and environmental engineer Registered Professional Engineer in West Virginia. He has spent his 35-year career specializing in impacted water treatment as well as reclamation and restoration. His experience includes hazardous waste studies, designs, and construction, stormwater management plans/designs, and permitting and compliance. He is also knowledgeable in compliance monitoring plans. He has been a project engineer or manager on several large-scale restorations, including multiple projects in West Virginia. He is currently managing a project to address impacted soil and water at the Hanlin Allied Olin Superfund Site in Moundsville, WV.

Project Manager, EPA, Hanlin Allied Olin OU1/OU2 Support, Moundsville, West Virginia. Rich has managed this Task Order since inception in early 2021, for oversight of RI/FS and O&M work at a Site containing former methylene dianiline (MDA), dinitrotoluene, chloromethanes, chlor-alkali, and other related product facilities, and a groundwater extraction and treatment plant (GWTP) to control groundwater and mercury discharges to the Ohio River. The Site includes a large Mercury Cell building with elemental mercury deposition in the soils, and several Site sewers which contribute discharges towards the river and local groundwater. Rich managed CDM Smith's performance of an independent investigation of Captina Island, a nearby area on the Ohio River with suspected ecological risk concerns (methyl mercury, dianaline), and a large 2023 Ohio River Study for impacts of mercury-related discharges to mussels and periphyton. This large study involved coordination with EPA Region 3, the EPA Regional Dive Team, USFWS, and WVDEP. Rich has also managed technical reviews of PRP submittals including GWTP O&M manual updates and RI/FS documents to summarize current groundwater contamination.

Rich previously performed as project engineer for the same Site during the RAC contract phase, overseeing field construction and performing design reviews of two very large onsite disposal facilities (landfills), designed to RCRA Subtitle C standards. Rich was the primary onsite contractor staff for EPA, ensuring all construction followed approved designs and specifications, health and safety standards, and air monitoring guidelines, over a three-year period.

Project Manager, EPA, Technical Assistance, Vienna Superfund Site, Vienna, West Virginia. Rich performed as project manager for this assignment, in which CDM Smith is installing several new monitoring wells via sonic drilling, to support the City of Vienna, WV's desire to return large water supply wells back into service for the community. The new monitoring wells will further protect the City's water supply from the multiple contaminant plumes in nearby groundwater. Rich oversaw subcontractor procurements, selection, and data review.

Project Engineer, EPA, Removal Action Design Review, Hanlin-Allied Area of Hanlin-Allied-Olin Site, Moundsville, West Virginia. Rich performed as the lead on technical review for the area On-Site Disposal Facility (OSDF) design, this involved two hazardous waste landfill cells. He reviewed the facility's surface water management design, including sediment basin, leachate collection and management, leak detection design and time of

Education

MS - Civil and Environmental Engineering, Virginia Polytechnic Institute and State University, 2005

BS - Civil Engineering, George Washington University, 1989

Registration

PE, Virginia, 1996

PE, West Virginia, 2020

Project Management Professional, 2019

Certifications

EPA Stormwater Management Model Version 5

Construction Safety Certification

Design/Build Project Management

OSHA 40-hour Hazardous Waste Operations with yearly refreshers (to date)

Confined Space Entry

travel, construction specifications, and construction QA Plan. He also handled all coordination, budgeting, and monitoring of subcontractor assisting with review.

Project Engineer, EPA, Remedial Design/Remedial Action, Vienna Superfund Site, Vienna, West Virginia. Rich was the project air quality engineer, preparing the air emissions inventory for the on-site SVE treatment system. Rich analyzed several groundwater volatility calculations and employed various engineering assumptions to estimate the systems' emissions. He calculated the systems' Potential-To-Emit (PTE) and maximum emissions based on operating scenarios. Rich reviewed the West Virginia DEP (WVDEP) air permitting regulations (Title V, National Ambient Air Quality Standards (NAAQS), and National Emission Standards for Hazardous Air Pollutants (NESHAPs) to determine the system's potential compliance status. He worked closely with the WVDEP air permitting staff while completing an air permit application for construction and determining Superfund permit waiver applicability.

Project Engineer, EPA, Feasibility Study, Vienna Superfund Site, Vienna, West Virginia. Rich served as primary project engineer and conceptually designed alternative methods of remediating groundwater contaminated from dry cleaning operations and waste disposal. These designs include technology alternative preliminary layouts and treatment schemes. Produced detailed remedial action cost estimates for all selected alternatives. Wrote process technology alternatives for groundwater, including in-situ chemical oxidation, in-situ air sparging and soil vapor extraction, containment by permeable reactive barrier walls, and pumping and treatment of groundwater via sedimentation, carbon adsorption, and granular filtration. He performed vendor research. Rich investigated state and Federal groundwater and surface water standards for the development of remediation goals to protect the local aquifer used for public drinking water wells, as well as the adjacent Ohio River. Rich conducted an air emission inventory of the treatment system's predicted emissions and worked with WVDEP to submit an air permit application for the remedial action. He became familiar with WVDEP air regulations under the NAAQS, NESHAP and Title V programs to determine applicable limits for the system and its compliance status.

Project Manager, Alkali Lake Site, EPA, Lake County, Oregon. Rich led the work plan development for technical oversight support of a Remedial Investigation / Feasibility Study (RI/FS) at the Alkali Lake Site conducted by the Potentially Responsible Party (PRP). The site consists of a 10.3-acre Chemical Waste Disposal Area (CWDA), where more than 25,000 55-gallon drums containing herbicides and pesticide manufacturing residue wastes were crushed and buried into 2- to 3-foot-deep unlined trenches. He oversees CDM Smith's technical oversight support to the EPA, which has entered into an Administrative Settlement Agreement and Order on Consent (ASAOC) with the PRP. The technical oversight services include review of PRP planning documents, preparation of oversight planning documents, oversight of PRP field activities, collection and evaluation of split samples, and evaluation of the human health and ecological risk assessment previously conducted at the site. Other support services include technical review of RI/FS documents produced by the PRP relating to topics including site characterizations, fate and transport studies, preliminary applicable or relevant and appropriate requirements (ARAR) identification, technology screening and evaluation, and treatability studies. As the project manager, Rich is also responsible for scope / budget / schedule adherence for the $3.5M task order, project team coordination,

streamlining activities to optimize resource utilization while maintaining quality, financial monitoring and reporting, preparation of monthly progress reports and invoices, and maintaining the project schedule.

Project Manager, EPA, L.A. Clarke & Son Superfund Site, Spotsylvania, Virginia. Rich has provided engineering support for a complex creosote DNAPL and former wood preserving site with contentious PRPs on the "Administrator's Emphasis List" for 10 years. He is currently managing field oversight and technical document reviews for the execution of the Remedial Action Plans, including installation of DNAPL recovery wells and removal of creosote and DNAPL-impacted soils and sediments. He wrote an Engineering Evaluation/Cost Analysis (EE/CA) to address creosote source material in surface soils/sediments, subsurface soil, and free-phase DNAPL in groundwater. EE/CA alternatives evaluated included passive and active DNAPL recovery, thermal treatment technologies, and in-situ solidification/stabilization (I/S/S). Wrote sections of EPA's Remedial Action Plans for execution by PRPs. Assisted EPA's development of conceptual site model. Supporting EPA in technical meetings with PRPs, lawyers, and technical experts. Utilizes 3-D subsurface hydrogeological model developed from PRP cross sections, boring logs, analytical data, and site DNAPL observations to support EPA's negotiations w/PRPs, EE/CA alternatives development, DNAPL volume and mass calculations, and dissolved groundwater plume extents. Performs technical review of PRP reports, including a "DNAPL White Paper" with DNAPL mobility evaluation, and determination of DNAPL physical characteristics and suitability for thermal, I/S/S, and recovery technologies.

Project Manager, EPA, RI/FS, Post-RI/FS and RD Oversight (multiple Task Orders), Dover Gas Light Co. Site, Dover, Delaware. Rich managed this project through various phases of investigation, RI/FS, RD, and RA for both Operable Units, for over 20 years. He managed the Post-RI/FS stage for OU2 after the recently completed Focused Feasibility Study (FFS) and FFS Addendum. Rich provided engineering support for various media contaminated from former MGP plant and dry cleaner sources. He wrote an extensive Remedial Alternatives Evaluation Report covering numerous technologies for both sources (thermal, capping, P&T, I/S/S, and bioremediation), and approximately 20 Alternatives, after the conclusion of a multi-phase Comprehensive RI covering groundwater, soils, surface water, sediments, and soil gas, which Rich managed from 2005-2013, in three separate phases, which included numerous historical groundwater wells, installation of new wells, City drinking water wells, and monitoring points for surface water and sediments along the St. Jones River., and Hydraulic Profiler and Membrane Interface Probe studies. He managed support for Preliminary Remedial Action Plan (PRAP), and Record of Decision (ROD) writing, and public meeting support, along with consultation with EPA on the preferred Thermal Treatment Interim Remedy at both source areas.

Project Manager, EPA, Saltville Waste Disposal Ponds Site, Saltville, Virginia. Rich has managed this Task Order for oversight of RI/FS, RD, and O&M work at a former Chlor-Alkali production facility which has been the source of mercury and other contamination in the adjacent North Fork Holston River (NFHR), site groundwater, soils, surface water and sediments which contribute discharges to the river. The Site includes several large waste ponds, an active wastewater treatment plant for controlling mercury and alkaline discharges to the river, and several surface water diversion ditches and channels. Rich managed and helped author the fast-track sixth Five-Year Review. Other activities Rich has

managed and performed include ongoing include field audits of geophysical survey, dye testing for GW/SW interaction, hydrogeological testing and multi-media sampling, and reviews of numerous technical submittals including O&M monitoring plans, work plans, dike stability plans, landfill cap designs, and ongoing data reports. Rich led the team performing construction oversight of a RCRA Subtitle C landfill cap over Pond 2, helping to minimize the ongoing leaching and discharge of mercury contamination to the NFHR.

Project Manager, EPA, Sharon Steel Farrell Works Disposal Area, Remedial Design Updates, Hermitage, Pennsylvania. Rich managed this design Task Order at a Site requiring repairs to OU 1 surface runoff drainage measures, specifically for the sedimentation basin area, soil improvements and landscape plantings in the constructed wetland channel, repairs to existing groundwater monitoring wells. CDM Smith supported EPA by visiting the site to assess the status of the site vegetation from the completed RA several years prior, and defining and refining the needed plantings in the wetland channel and working with EPA to strategize for the all-important timing of the handoff of the completed design and project to the Commonwealth of Pennsylvania. CDM Smith and EPA worked collaboratively to refine the design due to the extremely limited budget for the implementation of the project. A completed final, updated design was submitted on time.

Project Manager, North Penn Area 5 Site OU3, EPA Region III, Colmar, Pennsylvania. Rich has managed this $3M + Task Order, which involves post-RI/FS monitoring, CSM updates, FFS, and RD tasks for an industrial Site contaminated with chlorinated solvents and PFAS in shallow and deep bedrock groundwater, along with potential soils source areas. Rich is supporting the evaluation of MNA as a potential remedy and the successful treatment of PFAS in IDW groundwater with granular activated carbon.

Project Manager, EPA, Long-Term Remedial Action & RI/FS Oversight, Buckingham County Landfill, Buckingham County, Virginia. CDM Smith provided oversight for a Long-Term Remedial Action (LTRA) performed by the Potentially Responsible Parties (PRPs) at this landfill for nearly two decades. Rich managed all aspects of this project, including field work, reporting, modeling and engineering studies. The landfill contains industrial waste (mainly furniture manufacturing waste) and municipal refuse. Working closely with EPA and Virginia DEQ to monitor multiple PRPs' remedial action progress at the site. Developed 3D subsurface modeling to visualize subsurface stratigraphy and contaminant plumes which EPA used to negotiate additional PRP RI/FS investigatory work, and efficacy of pump and treat technologies. Wrote sections of independent Hydrogeological Evaluation reports which included plume mass/volume calculations, fate and transport calculations, and COC trend analyses. Rich developed four separate Five-Year Review reports.

Timothy N. Smith, PE
Project Manager

Tim has 19 years of engineering experience in West Virginia. He has a proven and demonstrated track record with engineering design standards and procedures. Prior to joining CDM Smith, Tim served WVDOH in various capacities. His responsibilities included scope of work notes preparation, Initial Engineer's Estimates (IEE), negotiation memos, etc. Tim previously served the WVDOH within the Traffic Engineering Division and the In-House Design Unit of the Engineering Division. Tim also served the Putnam County Commission as Planning Director/County Engineer for four years, his responsibilities included the review of commercial, industrial, and residential plans for compliance with various ordinances, building permit reviews, subdivision reviews, floodplain reviews and approvals.

Project Manager, Underwood Bridge, WVDOH, Tyler County, West Virginia. Tim is the project manager for CDM Smith in the development of plans for replacement of the Underwood Bridge located on Middle Island Creek in Tyler County, WV. CDM Smith will provide temporary traffic control plans, right-of-way plans, and permitting services. The project is located on CR 50 (Ross Run Road) just east of WV 18.

Project Manager, I-77 Pocatalico River Bridges, WVDOH, Kanawha County, West Virginia. Tim is the project manager for the development of plans for the rehabilitation of the I-77 Pocatalico River Bridges, which carry Interstate 77 over the Pocatalico River. It is located approximately 1.14 miles north of WV 622 in Kanawha County. The existing structures (BAR No. 20A233 and 20A451) are three-span steel girder bridges with an approximate overall length of 248.5-feet. The scope of work consists of a concrete deck overlay, joint replacement, substructure repair, and spot paint for both bridges.

Project Manager, I-81 Signing Renovation, WVDOH, Berkeley County, West Virginia. Tim is the project manager for the I-81 Signing Renovation project, which involves the study, design, and preparation of construction contract plans and related documents for renovation of all regulatory, warning, and guide signs on Interstate 81 (north bound and south bound) in Berkeley County from the Maryland state line to the Virginia State line. This sign renovation project also includes all signs in Maryland and Virginia approaching the West Virginia interchanges and the welcome center, as well as all the interchanges and all interchange lead-in signing within the project limits.

Project Manager, Mount Vernon Road Sidewalk, WVDOH, Hurricane, West Virginia. Tim is the project manager for the development of a Programmatic Categorical Exclusion (PCE) Type 2, along with the study, design, and preparation of construction contract plans and related documents for the Mount Vernon Road Sidewalk (CR 34/14) located in the unincorporated community of Teays Valley in Putnam County. The construction plans will be developed according to Alternate 3 from the Design Study Report. Alternate 3 includes pedestrian facilities on alternating sides of Mount Vernon Road. Midblock crossings are proposed to switch pedestrians from opposite sides of the road. This alternate also includes curve mooning at three locations.

Education

BS – Civil Engineering, West Virginia Institute of Technology, 2006

Registration

Professional Engineer (PE): West Virginia

Office

Charleston, WV

Prior to CDM Smith

Transportation Engineer Associate, WVDOH, Consultant Services Group, Charleston, West Virginia. Tim performed professional engineering work in the planning, design, construction, maintenance, and operation of highways and their attendant facilities and structures. He worked with consultants to accurately estimate the cost of bridge rehabilitation and replacement projects.

Planning Director/County Engineer, Putnam County Commission, Winfield, West Virginia. Tim was responsible for the review of commercial, industrial, and residential plans for compliance with ordinances. He managed building permit reviews and approvals, subdivision reviews and approvals, and floodplain reviews and approvals. Tim was also responsible for engineering project reviews, drainage reviews, site inspections, compliance inspections. He was the supervisor of the four staff members and managed the office budget.

Civil Engineer, Cenergy, LLC, Milton, West Virginia. Tim was responsible for concrete foundation designs for buildings, structural skids, filter separators, and heaters. Typical foundation designs implemented Sonotubes and spread footers. He managed reinforcing steel layout designs, quantity calculations, construction site pad layout, excavation details, and Stormwater Pollution Prevention Plans (SWPPP). His responsibilities also included erosion and sediment control design, site specifications and codes and AutoCAD drawings.

Consulting Engineer, Engineering Design and Testing Corp., Charleston, West Virginia. Tim was responsible for the analysis of residential, commercial, industrial, and institutional properties, including the evaluation of roofs, foundations, storm-related damage, blasting, construction vibrations, moisture intrusion, code compliance, and post-fire structural assessment. Analyses included photographic study, scope of damage, root cause, repair and/or replacement cost estimate, as well as competency/code compliance.

Highway Engineer Associate, WVDOH: Traffic Engineering, Charleston, West Virginia. Tim was responsible for the analysis of roadways, bridges, and school zones for traffic safety improvements. He managed the design of projects for traffic safety, including guardrail, high friction surface treatment, pavement markings, paving, signals, signing, rock excavation, and rumble strips, all ADA compliant.

Highway Engineer Trainee, WVDOH: In-House Design, Charleston, West Virginia. Tim was responsible for the analysis of roadways, bridges, and streams for structure renovation or replacement. He managed the design of structure projects, including concrete box-beam bridges, steel girder bridges, and various culverts. He provided inspection of the bridges, including the foundation, beam fractures, critical failures, fatigue cracks, and other deficiencies. He was also responsible for overall structural integrity and safety analysis.

Cannon F. Silver, PE, PMP

Quality Review Team

Cannon is CDM Smith's Climate Resilience for Remediation Discipline Leader. He has 30 years of experience leading site investigations, feasibility studies, technology evaluations, remedial design, construction oversight, remedial system operations and maintenance, and optimization under CERCLA "Superfund," RCRA and state programs. He has extensive experience serving in engineering and project management roles, and in interacting effectively with regulators and the public. His areas of technical expertise include innovative groundwater, sediment, and vapor treatment technologies, sustainability, and climate resiliency. He recently managed a climate change assessment of BHP's legacy mine assets within Canada and the United States to help BHP prioritize the risks across its nine legacy operations and identify actionable climate adaptation measures. He spearheaded development of an innovative data visualization dashboard using Power BI software to help BHP manage climate impacts. He is now overseeing climate assessments at four Canadian operations.

Project Manager, BHP Legacy Assets Climate Resilience and Adaptation Program: Phase 1 Climate Change Assessment, BHP, North America. Cannon is project manager leading a climate change assessment of BHP's legacy mine assets within Canada and the United States. He coordinated development of the methodology and a climate risk assessment tool to quantitatively assess the impact of climate change on BHP's closed mine assets. Cannon conducted a workshop with BHP corporate and operations personnel to evaluate the climate risks. He led the team to develop innovative analytics to help BHP prioritize the risks across their nine legacy operations and to identify actionable climate adaptation measures. He spearheaded development of an innovative data visualization dashboard using Power BI software to help BHP manage climate impacts. He is now overseeing climate assessments at four Canadian operations.

Senior Engineer, Butte Priority Soils Operable Unit (BPSOU), Silver Box Creek/Butte Area NPL Site, EPA, Butte, Montana. Cannon led a team reviewing two "greener cleanup" reports on behalf of EPA.

Senior Engineer, Brewster Village Well Field RI/FS, New York State Department of Environmental Conservation, Pittsford, New York. Cannon reviewed the sustainable and resilient remediation assessment for the feasibility study. The screening exercise assessed available resources, identified climate hazards, and provided recommendations for future monitoring. Potential climate impacts to selected alternatives included to the groundwater treatment system and changing groundwater elevations.

Senior Engineer, Speedy's Cleaners RI/FS, New York State Department of Environmental Conservation, Pittsford, New York. Cannon reviewed the sustainable and resilient remediation assessment for the feasibility study. The screening exercise assessed available resources, identified climate hazards, and provided recommendations for future monitoring.

Education

MS – Environmental Engineering and Science, Stanford University, 1994

BS – Engineering Sciences, Harvard University, 1993

Registration

Professional Engineer: Utah (1998), California, Michigan, New Hampshire, Ohio, and Virginia

Certifications

Project Management Professional (PMP #2635803, 2019)

Certified Professional – Ohio EPA Voluntary Action Program (CP-347) (2013)

OSHA 40-hr HAZWOPER (1992) and annual refreshers

Project Manager/Senior Engineer, Remediation Technical Operations Program Support, Confidential Defense Contractor, California, Maryland, and New York. Cannon is the project technical leader (and former project manager), coordinating between $4M and $25M annual investigation and remedial site activities as the client's managing contractor under Maryland Department of the Environment (MDE) Voluntary Cleanup Program (VCP) and state-led superfund consent-order cleanup programs. Cannon has coordinated multiple remedial investigations of groundwater, sediment, soil, and vapor intrusion, updating the site conceptual site model (CSM) by successfully integrating clear data quality objectives, 3-D visualization, and innovative techniques including passive flux meters and mass flux/discharge measurements. This included an investigation for per- and poly-fluoroalkyl substances (PFAS). Cannon has led development of feasibility studies and performed technology screening using multi-criteria decision analysis (MCDA) that incorporated NCP 9 criteria and sustainability footprint analysis (using SiteWise™). He has provided technical expertise with groundwater bioremediation and a permeable reactive barrier (PRB) pilot evaluation to reduce concentrations of trichloroethane (TCE), monitoring natural attenuation (MNA) of chlorinated benzenes (e.g., 1,2,4-trichlorobenzene), sediment dredging (8.6 acres, 55,000 cubic yards) and *in situ* treatment (11 acres), soil excavation (42,000 tons polychlorinated biphenyls [PCB]-contaminated TSCA waste down to 20 feet below ground surface using shoring), and vapor intrusion (VI) monitoring and mitigation using sub-slab depressurization. Cannon conducted an assessment of indoor air concentrations and potential sources over two months using an innovative continuous VI monitoring system that served to identify fluctuations and exceedances of TCE on a real-time basis within the commercial building, allowing the team to implement a cost-effective mitigation strategy that successfully reduced TCE VI risks. He coordinated storm sewer drain inspections, monitoring, cleanouts, and rehabilitation throughout the facility. Cannon has been involved in numerous meetings with state and federal regulators, including Environmental Protection Agency (EPA) Region 3 Remediation and TSCA programs, to negotiate cleanup of chlorinated solvents, PCBs, PAHs, metals, and radionuclides. When the groundwater PRB pilot did not meet objectives, Cannon spearheaded an amendment to the groundwater response action plan to obtain regulatory approval for a revised remedy. He supported community involvement and outreach through newsletters and presentations.

For the sediment remedy, Cannon coordinated the investigation, design, procurement, remediation, and monitoring. He evaluated the options for hazardous and non-hazardous sediment disposal, which totaled 75,000 tons. The remedy included an interim removal action dredging 1.3 acres of elevated PCBs, followed by the full remedy dredging an additional 3.7 acres and excavating 3.6 acres of a creek "in the dry." Stream restoration followed, including innovative seeding of submerged aquatic vegetation (SAV). An additional 11 acres was treated *in situ* by applying an innovative 2-inch-thick layer of powdered activated carbon using AquaBlok®, binding the PCBs and reducing their bioavailability. Cannon helped monitor the impacts of climate change during the stream restoration. He also led the procurement of the $23M remediation bid and was responsible for construction oversight team as the client's representative. He further assisted with permitting and public and regulatory communications throughout the process.

Glenn N. Iosue, PE, BCEE

Quality Review Team

Glenn is a civil and environmental engineer and an expert in addressing impacted soil and treating water. He is a Registered Professional Engineer in West Virginia (WV PE #027307) with 28 years of experience. Glenn has managed numerous engineering projects at both active and abandoned mine sites throughout the United States. This has included, but not limited to, reclamation and restoration activities, permitting, realty, construction management, construction oversight, stream and channel restoration, wetlands, treatment of mine-impacted soil and water, drainage controls, engineering designs for active and passive treatment systems as well as operation and maintenance, stormwater and erosion and sediment controls, reclamation of mine spoils and coal refuse piles, and stabilization and restoration of slopes. He has completed bench-scale tests, treatability studies, feasibility studies, alternatives evaluations, field pilot tests.

Glenn has also designed, installed, operated and maintained full-scale treatment systems. He has successfully addressed impacted sites to reclaim and restore mine lands. Glenn has led and managed site assessments and investigations, designs and corrective measures, stormwater management, wetlands and stream restoration, as well implementation and construction to build resilience and accommodate future impacts. His expertise include feasibility studies, assessments, and implementing innovative approaches to address challenging sites with impacts in soil and water to streams and rivers. He has been involved with numerous projects to help communities and stakeholders reclaim and restore impacted lands.

Senior Technical Manager, Engineering Designs, Multiple Sites, Various Locations. Glenn managed the engineering designs, permitting and construction to alleviate impacts at sites in West Virginia and throughout the United States. Solutions included conceptual, preliminary and detailed designs from infancy and studies to full-scale construction. Remedies included mitigation and corrective measures as well as engineering control plans to evaluate and protect sensitive receptors such as wetlands, streams, water bodies, and natural resources.

Principal in Charge, Kalamazoo River Superfund Site, Michigan EGLE. Glenn provided senior engineering review, management, and technical support for environmental assessments, investigations and corrective measures for 80-mile stretch of Kalamazoo River and its tributaries that is impacted with PCBs and other contaminants making river and sediments toxic to humans and wildlife. He developed technical solutions to attain objectives while leading and collaborating with multidisciplinary teams including engineers, scientists, and geologists.

Project Engineer, ExxonMobil, West Virginia. Glenn provided designs for closure of four former Exxon bulk fuel terminals under Voluntary Remediation Agreements. Project included risk assessment, free product removal, groundwater monitoring, and evaluation of multiple closure scenarios with detailed cost estimates. Passive treatment bench studies and pilot tests were completed in close coordination with WVDEP and ExxonMobil. Expedited receipt of permits and developed detailed work plans with precautionary measures to satisfy regulators.

Education

BS, Bioenvironmental Engineering, Rutgers University, 1997

Registrations

Professional Engineer: West Virginia (#027307), New Jersey, Pennsylvania, Virginia, Georgia, South Carolina, Texas

Board Certified Environmental Engineer (BCEE), *Specialty*: Environmental Sustainability

Honors

Rebuilding and Restoring New Jersey Communities after Superstorm Hurricane Sandy

Professional Activities

Member, National Ground Water Association

Interstate Technology Regulatory Council (ITRC)

CDM Smith

Project Manager, Raymark Industries, Pennsylvania. Glenn managed all aspects comprehensive site characterization and redevelopment program for a large facility under Pennsylvania's Brownfield Redevelopment program. Project involved engineering designs, permitting, and construction oversight. This included removal of over a dozen USTs and ASTs, closure of waste piles, asbestos and hazardous material assessments, planning of future site development, and development of baseline site characterization.

Technical Lead, South Branch Watershed, New Jersey. Glenn served as technical lead in analyzing years of biological monitoring data for South Branch of Raritan River's watershed. Data documented condition of South Branch and its tributaries, established technical baseline water-quality benchmark, guided communities in to restore impaired (polluted) sites, and implemented protective measures for non-impaired sites. Glenn assisted in developing and implementing water quality workshops to ensure quality control measures in collection of baseline data.

Project Manager, Garden State Growers, New Jersey. Glenn managed all aspects of engineering, design, and construction management for large-scale soil erosion and sedimentation control program for horticultural grower operation. He was responsible for field engineering and design, surveying, regulatory responses and negotiations, and coordination with the owner, contractor, and local regulatory authorities. He designed E&S controls as well as obtained wetlands and stream encroachment permits.

Project Manager, Petrunis Stream Bank Stabilization, New Jersey. Glenn managed and designed the stream bank stabilization for protection of existing structures at an energy facility. He authored technical engineering report with waterfront development permit for submission and approval by U.S. Army Corps of Engineers (USACE).

Project Manager, 26th and Penrose, Pennsylvania. Glenn managed the development of plans including engineering design and analyses for an abandoned solid waste landfill for submission to PADEP. The design included slope stability analysis, evaluation of interface friction angles, waste characterization, site grading, hydrogeological analysis with modeling software, erosion and sedimentation controls, and other design and engineering requirements pursuant to local, State, and federal regulations.

Project Manager, Military Facility, New Jersey. Glenn provided engineering designs, permitting and construction management activities at an active U.S. Army base. This included evaluating over 300 ASTs and USTs with total capacity exceeding 500,000 gallons on 31,000+ acres. Tanks were field-verified and GPS surveyed for integration into GIS database. Updated plans to assess current and future flood risks. Task orders were completed in close coordination with military personnel and regulators. Field work was completed on expedited basis to submit final plans within required regulatory deadline. DEP approved final plans and indicated submittal was largest plan approval in the State.

Project Manager, Highway Materials, Pennsylvania. Glenn provided engineering designs for evaluating emission control devices and calculating air emission thresholds for a new plant construction at a quarry utilizing Best Available Technologies. Designed and engineered a quarry deep ending including site plans, detention basins, and cross-sections with a team of engineers and geologists for future expansion. Reviewed, evaluated and engineered Blasting Plan, pumping data, slope stability analysis, stormwater design and calculations, and NPDES permitting requirements. Prepared and submitted air and other regulatory permits for DEP approval.

Certifications and Training

OSHA 40-hour HAZWOPER (initial) – EPA Office of Emergency and Remedial Response

OSHA 8-hour HAZWOPER Refresher Training

OSHA 30-hour Construction

First Aid, CPR and AED

A/E Project Management, PSMJ Resources

Boards

Executive Board President, Blackledge, 2016-Present

Board President and VP, QCSD, 2022-2024

Education Committee (Chair), Human Resources and Safety Committee (Chair), QCSD, 2021-Present

Awards

Leadership Award

Honorable Mention for Outstanding Performance

Employee of the Year

Gunnar R. Emilsson, PG, PE, BCEE

Quality Review Team

Gunnar is CDM Smith's Mined Land Restoration Discipline Leader with more than 35 years of experience performing and managing environmental and engineering investigations, designs, and remedial actions, specializing in the closure of large, complex mining and smelting sites. He is currently working on remedial design and action in large areas of land reclamation and waste closures for the Anaconda Smelter NPL Site, as well as serving as lead practitioner for the remedial design of the Gilt Edge Superfund, an inactive cyanide heap leach gold mine in western South Dakota. He has also served as project manager for EPA at the Columbia Falls Aluminum Company NPL Site, assisting EPA in remedial investigation/feasibility study technical oversight. Gunnar has also provided reclamation expertise and technical writing support for an Environmental Impact Statement studying alternatives to close a cyanide heap leach gold mine in central Montana.

Prior to joining CDM Smith, **Gunnar served as a mining engineer for the Montana Department of Environmental Quality**, where he directed geotechnical investigations to analyze slope stability of tailings dams and open pit highwalls, performed engineering and geotechnical analyses under the National Environmental Policy Act (NEPA), and calculated reclamation performance bonds for hard rock mines throughout the state.

Project Manager, EPA, Anaconda Smelter NPL Site, all phases of CERCLA process, Anaconda, Montana. Gunnar manages the work efforts of the technical review team (composed of both CDM Smith personnel and subcontractors as well as technical experts from state and federal government agencies) supporting EPA in developing strategy to clean up contaminated soils, mining wastes, surface and ground water for this large site (>50 square miles) impacted by smelter emissions and mine waste disposal practices. Gunnar is responsible for completing technical review of PRP design submittals, managing both field oversight and independent sampling efforts, preparing and reviewing QA deliverables such as SAPs and DSRs, and assisting EPA in scoping remedial design, remedial action, inspection, monitoring, maintenance, and institutional controls for this complex site.

Significant deliverables for which Gunnar wrote all or significant portions of for this project include the Anaconda Regional Water, Wastes & Soils (ARWW&S) OU Remedial Design Work Plan, the Community Soils OU Residential Yards Final Design Report/Remedial Action Work Plan, Warm Springs Creek Streamside Tailings Design Criteria Report, Institutional Controls Preliminary Design Report, Uplands Remediation Design Criteria Reports, Dutchman Creek Final Design Report, Willow Creek Final Design Report, and Warm Springs Creek Final Design Report. In addition, Gunnar supports the EPA Remedial Project Manager in completing RD/RA scoping documents to direct the PRP in completing final deliverables for the projects.

Project Manager, EPA, Columbia Falls Aluminum Company Superfund Site. Gunnar has managed CDM Smith's technical support to EPA for the PRP-led remedial investigation / feasibility study (RI/FS) of this defunct aluminum smelter that operated from 1955 to 2009. The aluminum production process generated several waste products, notably spent potliner (SPL). The SPL consisted of the thick layer of carbon bonded to an insulating brick

Education

MS, Geophysical Engineering, Montana College of Mineral Science and Technology, 1991

BS, Geological Engineering, Montana College of Mineral Science and Technology, 1984

Registration

Professional Engineer, Civil, Montana, 1991

Professional Geologist, Wyoming, 1992

Honors/Awards

Board Certified Environmental Engineer (Hazardous Waste), American Academy of Environmental Engineers and Scientists

layer which contained fluoride, sodium, aluminum, and small amounts of cyanide. The fluoride and sodium in the SPL were from the sodium fluoride (cryolite) bath and the cyanide formed in the cathode as a side chemical reaction during aluminum production.

Gunnar manages our technical experts in reviewing PRP submittals, providing comments, and coordinating with EPA and the Montana Department of Environmental Quality (DEQ) reviewers to consolidate and produce joint agency comment packages for an aggressive RI/FS schedule.

Some of the submittals that CDM Smith has reviewed include but are not limited to: a review of the RI/FS work plan, review of the Phase I/Phase II SAP, providing field oversight during sampling events, review of the human health and ecological risk assessment work plans, review of the baseline human health and ecological risk assessments, review of the preliminary remediation goals (PRGs), and review of the feasibility study. The reviews focused on the DQOs, ensuring that project objectives were met for human health and ecological risk assessment, site characterization, and feasibility study. Gunnar assisted the EPA Remedial Project Manager (RPM) with other aspects of project management, such as reviewing submittals related to the Resource Conservation and Recovery Act (RCRA) demolition of the plant and answering community questions. For the South Percolation Ponds Removal Action, he helped EPA develop a simplified removal plan that accelerated the schedule and reduced analytical costs.

Project Manager, National Park Service, Palmerton Zinc Pile Superfund Site, Palmerton, Pennsylvania. Gunnar served as project manager, on behalf of the National Park Service (NPS), for a former zinc smelter Superfund Site located near a portion of the Appalachian National Scenic Trail. Zinc smelting operations resulted in nearly 2,000 acres impacted by historical smelter emissions. Gunnar supported NPS with oversight of PRP RAs to restore this NPS property as an eastern hardwood forest. He also oversaw the PRP RI/FS to ensure parklands protect the health of park employees, volunteers, and visitors. He was responsible for completing a technical review of PRP submittals, managing field oversight and independent sampling efforts, and assisted NPS with oversight of the human health risk and ecological risk assessments being performed as part of the RI/FS.

Lead Practitioner, EPA, Gilt Edge Mine Superfund Site, Deadwood, South Dakota. Gunnar served as CDM Smith's Lead Practitioner in preparing the remedial design for the closure of this large inactive cyanide heap leach gold mine located in the Black Hills of South Dakota. In this capacity, he provided senior technical review in the developing remedial alternatives for completing mine closure, and assisting in technical presentations to the client and stakeholders to develop the final closure plan for this complex site consisting of acidic pit lakes, waste rock dumps, historic underground mine workings, heap leach pads, and water treatment plant operations.

Prior to CDM Smith

Engineer, Zortman/Landusky Mines Reclamation, Montana. Gunnar developed accounting procedures to track expenditures incurred from contractors under a complex network of forfeited reclamation performance bonds having a cumulative worth of $26 million dollars to meet the requirements of the bankruptcy settlement.

Nicholas R. Anton, PE

Discipline Lead: Mine Reclamation Engineering

Nick is a senior mining engineer and Licensed Professional Civil Engineer in West Virginia (WV PE #027294) with 20 years of experience specializing in groundwater, surface water, soil remediation, and in particular, the storage and treatment of mining influenced water (MIW), geochemistry of mine wastes and MIW, the remediation of mine waste materials associated with active and abandoned mines, and mine land reclamation. He has been involved in nearly all of CDM Smith's mining projects during the past two decades, during which time his experience has included construction oversight and management; water treatment system design; mine waste excavation, regrading, and cover system design; field sampling planning and implementation for remedial investigations; feasibility studies, treatability studies, and pre-design investigations; report writing for remedial investigations, feasibility studies, and remediation design; treatability studies and other technical reporting.

Project Engineer, EPA, Silver Bow Creek/Butte Area Superfund Site, Butte Priority Soils Operable Unit and Butte Mine Flooding Operable Unit, Remedial Design and Remedial Action, Silver Bow County, Montana. Nick reviewed several documents prepared by the settling defendants and/or responsible parties for this site relating to remedial design for the Butte Priority Soils Operable Unit (BPSOU). Nick worked with the project team over several years reviewing various documents related to site investigation and remedial design, leading up to the development and negotiation of the consent decree for the project with the settling defendants. Subjects related to remedial design/action included assessment of existing data at various areas of the site using ArcGIS software to develop 3-dimensional representations of the extent of mine-impacted soils that may require remediation. Other design work included general review of operations and maintenance activities at various mine cover areas and preliminary designs for additional mine waste removals and/or capping. In addition, he focused on review of documents pertaining to cleanups and operations and maintenance on Burlington Northern Santa Fe railroad land in the OU, including design of stormwater best management practices and cap and cover designs over mine impacted soils.

For the Butte Mine Flooding Operable Unit (BMFOU), Nick reviewed several documents prepared by the settling defendants and their respective consultants for this site relating to the remedial action adequacy and design elements associated with closure of the mine. Nick worked with the project team over several years reviewing various documents related to evaluation of the current operations of the high density sludge (HDS) lime treatment plant for the acidic MIW collected at the site; adequacy of the plant for water flow increases and water quality changes; site water management and hydrologic water balances; reclamation design and MIW source reductions; surface water and groundwater data; HDS pilot study data; and design and operation data for a filtration-based polishing plant For these subjects, document types reviewed included associated testing plans, sampling plans, quality assurance plans, design documents, drawings, and specifications, water balance technical memorandum, operational data reports, and treatability testing data reports.

Lead Environmental Engineer, EPA/United States Army Corps of Engineers (USACE), Midnite Mine Superfund Site, Remedial Action, Wellpinit, Washington. As the project

Education

MS – Environmental Engineering, New Mexico Institute of Mining and Technology, 2005

BS – Chemical Engineering, Michigan Technological University, 2002

Registration

Professional Engineer:
West Virginia (2025), Colorado, 2008
Montana, 2017

Certifications

OSHA 40 Hour Hazardous Waste Operations and Emergency Response, 2005

8 Hour Hazardous Waste Supervisory Training

CDM Smith Field Supervisor Training

Mine Safety & Health Administration Part 48 - New Miner Training, 2019

Honors/Awards

2011 Interstate Technology Regulatory Council Industry Recognition Award

2015 Superior Service Award for Helena, Montana office

technical leader, Nick led review of remedial action construction related documents prepared by the settling defendant, Newmont Mining Corporation. Remedial action construction at this closed uranium mine has been ongoing at this site since 2016. The scope of the remedial action for mine closure includes excavation and disposal of over 18 million cubic yards of low-level radiologically contaminated mine waste material into the two open pits, low permeability cover construction over the consolidated waste, reclamation of all excavated and disturbed areas, runon and runoff controls, MIW collection and treatment in an onsite water treatment plant, and discharge of treated water through a 5-mile long pipeline system to a nearby reservoir. Duties include review and approval of documents as prepared by Newmont's contractors, including submittals, requests for information, engineering and design change notices, remedial action work plan related submittals (e.g., work plans for construction quality control, environmental, stormwater, operations and maintenance, inspection and testing, sampling, revegetation, etc.), weekly, monthly, and annual construction reports, and as-built drawings. Nick participated in weekly construction meetings with all related stakeholders and consultants, and leads document review tracking, document review coordination with the project team, and client response and comment to document reviews. Nick also attended annual and/or quarterly in-person meetings with project stakeholders and attends site visits.

Environmental Engineer, EPA/USACE, Formosa Mine Superfund Site, OU1 Remedial Design, Douglas County, Oregon. Nick provided engineering design services for remedial design closure of this abandoned mine. The completed final design was revised prior to construction based on USACE comments, new available data, and changing standards for geotechnical stability. The design scope includes excavation and consolidation of waste rock materials within two onsite repositories, rock gabion retaining wall construction as part of the repositories, excavation and processing of on-site borrow soil and rock materials, reclamation of excavated areas using in place stabilization amendments and revegetation, and access road construction. Due to the acid generating nature of the mine waste materials, both repositories required low permeability cover systems to contain the materials. Based on surface ground slope, repository design required either hardened rock cover for steeper areas and a vegetated cover for more shallow areas. Nick provided review and markup of drawings to incorporate USACE comments and other changes, grading and gabion wall design, borrow soil and rock design, calculations, specifications updates, and basis of design report revisions.

Project Engineer, EPA/Montana Department of Environmental Quality (MDEQ), Upper Tenmile Mining District Superfund Site, Remedial Design and Remedial Action, Lewis and Clark County, Montana. Nick assisted with construction oversight for reclamation of several abandoned mine sites, including leading the field remedial action confirmation sampling effort and field-portable x-ray fluorescence (FPXRF) analysis. Hundreds of FPXRF and laboratory confirmation soil samples were collected to provide real-time metals results to the construction contractor and final documentation of metals concentrations at reclaimed mine sites. The data collected was used to confirm excavation of contaminated soils was completed in accordance with the remedial action levels, and based on results, additional excavation was conducted, or the site was backfilled and revegetated. Laboratory metal confirmation metals results were used to develop statistical comparisons and validation of FPXRF data and presented in the remedial action completion report for the site. Under DEQ contract, Nick provided passive MIW treatment

design for an abandoned mine remedial design effort and also provided technical review of the overall remedial design drawings package and various components of specifications. The remedial design included individual remedial designs for excavation of mine wastes at several abandoned mines, reclamation plans, stream stabilization/restoration, hauling and transportation plans for mine wastes, and disposal design at the Luttrell repository.

Lead Design and Resident Engineer, Colorado Department of Public Health and Environment, Captain Jack Mine Superfund Site, Surface Contamination Remedy Design and Construction Administration, Boulder County, Colorado. Nick performed duties as the lead design and construction oversight engineer for the surface closure remedial design, which involved removal of contaminated mine tailings, waste rock, and soil materials and consolidation in an engineered repository. Mine materials were excavated based on designed extent as well as FPXRF confirmation sampling using incremental sampling methods. Additional aspects of the scope of work for the design and construction project included demolition of historic mine facilities, development of fill and growth media from suitable onsite soil resources, and various site restoration activities, such as regrading, runon/runoff controls, placement of growth media and hydroseed, erosion control fabric installation, rip rap placement, and creek rehabilitation. During the construction phase, Nick performed weekly oversight during construction; managed and reviewed all contractor submittals, payment applications, requests for information, and change orders; and coordinated with the contractor and owner throughout construction, as well as other members of the construction oversight team. For the three-year post-construction warranty period, Nick reviewed seeding and erosion control inspection data, performed site inspections, and coordinated with the contractor and client for operations and maintenance work during the warranty period.

During the design phase, Nick designed the contract drawings, worked with the AutoCAD drafter to prepare the drawings, assisted with development of contract specifications, and prepared the basis of design report for the remediation work. Additional duties included preparation and negotiation of the contract work plan, review of monthly reports, and management and coordination with subcontractors. Nick also led the pre-design investigation sampling activities and assisted the site geologist and geotechnical engineer with preparation of a data memorandum summarizing the data collected. Pre-design investigation activities included hollow-stem auger drilling and test pit excavation for collection of geotechnical samples, site reconnaissance, soil paste pH and conductivity, total metals, and acid base accounting sample collection, and GPS data collection.

Lead Design Engineer, Lake County, Colorado Board of Commissioners, Lake County Contaminated Soil Repository Design and Construction Administration, California Gulch Superfund Site, Lake County, Colorado. Nick performed duties as lead design engineer for the contaminated soil repository design, which involved construction of a repository to receive lead-contaminated soils excavated from residential and commercial properties. The project included excavation of a borrow soil and rock area to create the repository floor; processing of borrow soil and rock for repository construction and future use; excavation of a clay borrow area for use as a repository liner; installation of a clay liner and leachate collection system at the repository; and various site restoration activities such as regrading, runon/runoff controls, placement of growth media and hydroseed, erosion control fabric installation, and rip rap placement. Nick conducted planning for pre-design sampling activities, designed the contract drawings, worked with the AutoCAD drafter to prepare the drawings, assisted with development of contract

specifications, and prepared the basis of design report for the remediation work. During construction, Nick assisted with coordination with the contractor and owner and review of contractor submittals.

Project Engineer, Successor Coeur d'Alene Custodial and Work Trust, Operable Unit 3 of the Bunker Hill Mining and Metallurgical Complex, Treatability Studies, Shoshone County, Idaho. This project involved bench-scale proof-of-principle and column treatability studies for two different circum-neutral MIW discharges at the site, each containing elevated cadmium, lead, and zinc concentrations. One of the MIWs had adequate sulfate for a BCR, and one had low sulfate that required additional sulfate amendment for the BCR to function. For each site water, batch studies were completed followed by laboratory column studies.

Nick led the effort for testing design and planning, system construction, implementation, and report evaluations, as well as task management for project personnel and ensuring scope, schedule, and budget were met. He evaluated data and worked with the team to develop conceptual designs and recommendations for future work.

Environmental Engineer, EPA, Anaconda Smelter Superfund Site, Anaconda-Deer Lodge County, Montana. Nick worked on a two-season sampling study of smelter-impacted soils to evaluate the effects of in situ soil treatment using lime and fertilizer. Selected areas were identified and sampled prior to the remediation effort and after the soil remediation and revegetation. Samples were processed and submitted for analysis by in vitro bioaccessiblity (IVBA) methods to determine the potential change in bioavailability of lead as a result of pH adjustment by the lime and binding with phosphate from fertilizer. Bioavailability to avian species was the primary goal of the study. Samples were processed and analyzed by electron microprobe to determine their general geochemical characteristics to aid in the understanding of certain minerology that may either be more or less bioavailable. Nick assisted with sampling and documentation, subcontract laboratory scope of work, laboratory coordination, report writing, and technical review. Samples of smelter slag were also collected and analyzed by IVBA and electron microprobe to evaluate arsenic and lead bioavailability to humans. Nick coordinated laboratory support and technical review of the report provided to the EPA.

Environmental Engineer, Klau/Buena Vista Mine Superfund Site, Operable Unit 1, EPA, Paso Robles, California. The Klau and Buena Vista mines are two former abandoned mercury mines in central-southern California. For this abandoned mercury mine, Nick worked completed a surface water loading assessment at the mine areas. He reviewed existing data from area surface water drainages, springs, and adit discharges. Nick completed a preliminary reconnaissance assessment at the site with collection of field samples and site GPS data regarding the sources and transport of MIW at the site, some of which was acidic due to the presence of mercury sulfide ores containing pyrite. Nick led the effort for development of a sampling plan/quality assurance plan for a more detailed water quality loading study with planned locations, helped direct the field investigation, assessed collected data, and wrote a technical memorandum describing the results and identifying the sources of and fate and transport of MIW at the site.

Trent B. Thomas, PE

Discipline Lead: Civil Engineering

Trent is a civil engineer and Licensed Professional Engineer in West Virginia (WV PE#027431) with 10 years of experience in environmental engineering, construction management and oversight. His civil engineering experience includes stormwater management design and Stormwater Pollution Prevention Plan (SWPPP) preparation and implementation, civil design for railroad track infrastructure expansion and bridge replacements, hydrology and hydraulic analysis of drainage basins, wastewater system design, mine subsidence closure design, residential yard remediation design, engineer estimate development, development of project specifications, and septic system design and permitting. Trent's environmental engineering experience includes Clean Water Act (CWA) Section 404/401 permitting, Floodplain and Development permitting, soil sampling and analysis, and EPA superfund site remedial design and reclamation. Trent's construction management and oversight experience includes cost estimating, project scheduling, effectively communicating with clients, subcontractors, and field personnel, and field oversight of construction and remediation projects. Trent has assisted in closure designs, cost estimates, coordination with subcontractors, field inspections, and field oversight of construction activities on several Teck American Legacy Properties mine sites, as well as developing a groundwater remediation solution at the Rio Tinto Holden Mine in Washington.

Project Engineer, EPA Superfund Remediation Projects. Trent has been a project engineer on a variety of EPA Superfund projects, including Upper Tenmile Creek Superfund Site and Anaconda Smelter Superfund Site. Duties have consisted of assisting in development of remediation designs, engineer estimates, project specifications, and contractor submittal reviews. Field oversight activities on superfund sites has included operating the Luttrell Water Treatment Plant for two summers, construction oversight of a residential yard remediation project in the town of Rimini consisting of removal of contaminated soils and installation of a new wastewater system, new potable water system, and importation of clean soils. Trent has also performed soil sampling in residential yards associated with remediation projects and construction oversight for residential yard remediation projects in the town of Anaconda.

Project Engineer, Teck American Legacy Properties Projects. Trent has been a project engineer on a variety of Teck American Legacy Properties projects, including subsidence closures at the Warm Springs Creek Mine, piezometer installation at the Brock Creek Mine, subsidence closures at the Douglas Creek Mine, and various maintenance projects at the Warm Springs Creek, Brock Creek, and Douglas Creek Mines. Duties for these projects consisted of assisting in closure designs, cost estimates, coordination with subcontractors, field inspections, and field oversight of construction activities. Trent has also performed work to obtain stream crossing permits on behalf of Teck American for installing temporary stream crossing at the Douglas Creek Mine to facilitate subsidence closure activities.

Project Engineer, Rio Tinto Holden Mine Remediation Project. Trent has been a project engineer for the ongoing Holden Mine Phase 2 Remediation Alternative Feasibility Analysis. The project consists of developing alternatives for groundwater remediation in

Education

BS – Civil Engineering, Montana Tech-University of Montana, 2014

Registrations

Professional Engineer: West Virginia (2025), Montana (2021)

Certifications

MT SWPPP Administrator

MT Engineer Intern

MSHA Part 46

CPR / First Aid Trained

place of the U.S. Forest Service Record of Decision full-depth (surface to bedrock) ground penetrating barrier wall. Trent's duties for this project have consisted of assisting with development of pre-feasibility study documents, including; design for alternatives (consisting of a groundwater extraction well network alternative, partial depth barrier wall alternative, and combination of groundwater extraction wells and partial depth barrier wall alternative), development of the pre-feasibility report, design for a pilot study consisting of extraction wells, development of pilot study work plan, and field implementation and execution of the pilot study. Field implementation and execution of the pilot study have included: construction of a pipe network consisting of flow meters, analytical probes, sample ports, and associated valves, programming and deploying of level loggers throughout an observation well network, oversight of well development, groundwater sampling, groundwater drawdown data management, and coordination with other contractors and CDM Smith staff. The Holden Mine Site is a remote location, only accessible via barge or crew boats. Trent was responsible for scheduling crew mobilization and demobilization to and from the site, in addition to coordinating shipments of equipment/materials, and samples to and from the site. Trent was also the Health and Safety Lead for CDM Smith subcontractors during field work activities.

Hydrologic and Hydraulic Design Lead, Union Pacific Railroad Bridge Program. Trent has been the design lead for H&H analyses performed on Union Pacific Railroad (UPRR) bridge/culvert sites at various locations throughout the UPRR System for the 2019, 2020, and 2021 UPRR Bridge Program years. During his work with the UPRR Bridge Program, Trent has performed all aspects of the bridge program, such as front-end field work consisting of site reconnaissance and surveying of existing railroad infrastructure and associated drainage basins. In addition to the field work, Trent has performed site hydrology modeling using a variety of methods, including using USGS Regional Regression Equations, SCS design storm, Unit Hydrograph, SCS Curve Number, and SCS lag formula, and Rational Equation Method. He has also performed hydraulic modeling using survey data gathered in the field and hydrology developed for drainage basins to provide hydraulic analysis of existing UPRR structures and to analyze and recommend replacement structures that meet or exceed UPRR standard hydraulic criteria. After completing hydrologic and hydraulic analysis of existing UPRR structures and recommended replacement structures, Trent has completed the survey drawings and recommendation forms submitted to the UPRR Structures Design Group. Trent was also responsible for obtaining all environmental permits required for bridge/culvert replacement structures, including floodplain/development permits, CWA 404/401 permits, and state/regional permits.

Project Engineer, Various Union Pacific Railroad Projects. Trent has been a project engineer on a variety of UPRR projects, including maintenance and roadbed stabilization projects, emergency response projects (derailments/floods), and dam rehabilitation projects. Duties have included roadbed stabilization design, environmental permitting, dam inspection and rehabilitation design, and construction oversight. Highlights from these various projects include: flood mitigation design for the Austin, Ennis, Midlothian, and Marysville Subdivisions; field engineering and construction oversight during the Powder River, DeSoto, Lafayette, Marysville Subdivision, and La Grande Subdivision floods; dam inspections during the UPRR Dam Inspection Pilot Program which identified several potential risks to UPRR infrastructure and potential UPRR liabilities, and civil design of the Roundhouse Dam Rehabilitation project.

Devin Wilson, PWS, CPESC, CESSWI, ENV SP

Discipline Lead: Natural Resources/Wetlands

Devin is an Environmental Scientist, Regulatory Specialist, and Restoration Ecologist. With over two decades of experience, he has built upon his diverse academic background of applied sciences and developed a firm understanding of the complex interactions between plants, soil, water, and other environmental variables. Devin currently holds credentials as a Certified Professional in Erosion and Sediment Control (CPESC) since 2009, Certified Erosion, Sediment, StormWater Inspector since 2023, Certified Professional Wetland Scientist (PWS) since 2014, and Envision Sustainability Professional (ENV SP) since 2014. He concentrates on the sustainable aspects of projects, drawing on his experience to recommend ways to construct projects more in-tune with nature, which has helped facilitate the design and environmental permitting of a vast array of environmental, water, energy, and transportation projects. Devin's field experience includes wetland delineations and habitat assessments, stream stability assessments, erosion and sediment control inspections, as well as other environmental investigations and sampling of subject sites. Devin seeks out opportunities to ensure that projects work with nature, incorporating sustainability and resiliency into his projects.

Lead Environmental Scientist, Ohio Division of Natural Resources, Abandoned Mine Lands – Ecological Services Contracts, McCormick Run Road Highwall, US 30 Highwall Reclamation, and Y&O Road Highwall, Columbiana County, Ohio. Devin coordinated desktop planning and wetland and habitat investigations for the three abandoned mine land reclamation projects. The work involved wetland delineations and stream mapping, habitat characterization and invasive species mapping. Leveraging CDM Smith's remote sensing and machine learning technologies, field efforts were significantly reduced, and various resources were better classified and more accurately mapped. The results of these investigations helped support agency consultation with U.S. Fish and Wildlife Service (USFWS) in compliance with Section 7 of the Endangered Species Act, and consultation with the U.S. Army Corps of Engineers (USACE) and Ohio Environmental Protection Agency (OEPA) regarding Section 404 and 401 of the Clean Water Act.

Environmental Scientist, EPA Region 10/United States Army Corps of Engineers (USACE), Midnite Mine Superfund Site, Remedial Action, Wellpinit, Washington. Midnite Mine is a closed uranium mine, with remedial action construction activities ongoing since 2016. The scope of the remedial action generally includes the excavation and disposal of low-level radiologically contaminated mine waste into two open pits, a construction cover over the consolidated waste, reclamation of all excavated and disturbed areas, with run-on and runoff controls. Devin has supported this remedial action by providing reviews of various submittals for vegetation sampling methodology, as well as annual vegetation sampling and erosion reports, and is providing technical review and comments on plant establishment, invasive species, and erosion and sediment control as the remedial action progresses.

Environmental Scientist, Libby OU3 Asbestos Superfund Site, EPA, Libby, Montana. Devin served an ongoing role as subject matter expert for vegetation and soil erosion control for the former vermiculite mine located near Libby, MT. Devin provided technical

Education

BS – Agriculture, Natural Resources and Environmental Science Kansas State University, Manhattan, Kansas, 1996

Certifications

PWS – Certified Professional Wetland Scientist, 2014, #2533

CPESC – Certified Professional in Erosion and Sediment Control, 2009, #5092

CESSWI – Certified Erosion, Sediment, StormWater Inspector, 2023, #12046

ENV SP – Envision Sustainability Professional, 2014

40-Hour HAZWOPER No. 754972030

review and comment of a vegetation sampling plan, as well as field oversight of the executed vegetation sampling plan.

Wetland Scientist, Improve I-70 SIU 3 and SIU 6, Missouri DOT, Missouri. Devin is leading wetland delineation and stream assessments for two segments of independent utility (SIUs) of the Improve I-70 project for the Missouri Department of Transportation. This includes the coordination and scheduling of field teams and compiling results for reports and data deliverables for SIU 3 which is 14 miles, and SIU 6 which is 26 miles.

Biologist, Hazard Mitigation Assistance Grant Program, US Federal Emergency Management Agency (FEMA) Region 6, Texas. Devin is supporting the implementation of FEMA Region 6 Hazard Mitigation Grant Program. He reviews grant applications and provides biological and habitat documentation of compliance with Section 7 of the Endangered Species Act for various flood mitigation projects in Texas.

Field Team Lead and Sampling Support, Sunflower Former Army Ammunition Plant (SFAAP), USACE – Kansas City District, De Soto, Kansas. Devin is the Field Team Lead as well as providing sampling support for the remedial action at the former Army ammunition plant. He serves on the sampling team that collects site delineation soil samples, confirmatory soil samples, waste characterization soil samples, stormwater samples for laboratory analysis, as well as measuring water elevation at monitoring wells. Sampling is often performed in coordination with heavy machinery operators actively excavating sites. Devin supports various efforts including packing samples for shipping to laboratory facilities for analysis, completing chain of custody forms, and maintaining the field logbook as daily work progresses. Devin also collects location data for sample points with a Trimble GPS system to record and catalog sample locations and sample IDs in ArcGIS.

Environmental Scientist, Olin Corp (McIntosh Plant) Superfund Site, EPA, McIntosh, Alabama. Devin provided oversight of field sampling, remediation, instrument removal and installation, and construction activities for the EPA at the Olin Corp (McIntosh Plant) Superfund Site in McIntosh, AL. He oversaw sediment and water sampling providing updated to daily field logs, daily status reports, and photo documentation for Environmental Protection Agency (EPA) review.

Environmental Scientist, Proctor Creek Ecosystem Restoration, Atlanta, Georgia. Devin provided technical support for developing an invasive species plan for a stream restoration project in a highly urbanized and degraded stream in the City of Atlanta, Proctor Creek. The creek has degraded due to watershed activities and has become channelized with eroding and failing stream banks. Invasive plant species have become established and have completely dominated certain areas. Management of invasive species prior to stream restoration activities and prior to the seeding and installation of native plant materials is vital to the success of the desired plant community. Devin provided criteria for a field investigation conducted by a local CDM Smith biologist to assess the extent and composition of invasive species. He provided recommendations to the project team to develop an invasive species management plan to be used in all phases of the project transitioning from preconstruction activities, during construction, native plant establishment, and post-construction phases.

Gregory W. Sanders, PE

Discipline Lead: Geotechnical Engineering

Greg has 24 years of experience in geotechnical and tunnel engineering for private, commercial, and government clients. He has experience in performing geotechnical investigations and designs for mine sites, tunnels, micro-tunneling, horizontal directional drilling (HDD), dams, levees, pipelines, solid waste landfills, and water and wastewater treatment plants. Greg has provided technical support as project engineer and project task leader for major projects in North and South America. He has participated in the application of finite element methods for complex geotechnical problems, tunnel design, design of various soil retaining systems, and deep shaft design using ground freezing techniques.

Geotechnical Engineer, Formosa Mine Superfund Site, EPA, Douglas County, Oregon. Grego was responsible for the geotechnical for the OU 2 repository design at the abandoned Formosa Mine Superfund Site, a 25-acre mine site located in the Klamath Mountains. Mining extracted copper, minor gold and silver from volcanogenic massive sulfide ore deposits and wastes pose severe risk to aquatic environment from acid rock drainage (ARD). Greg coordinated the field exploration services and prepared the assisted in the preparation DAR. Individual project responsibilities included gabion wall design, slope stability analysis, harden cover stability design, assisting with the preparation of project plans, and coordination with other technical disciplines on the grading and cover designs.

Senior Geotechnical Engineer, Successor Coeur d'Alene Custodial and Work Trust, Kellogg, Idaho. Greg is the Project Geotechnical Engineer Big Creek Repository Annex Design project. The Interim Record of Decision (ROD) Amendment (EPA 2012) identifies the Selected Remedy for OU1, OU2, and OU3 of the Upper Basin of the BHSS. Implementation of the Upper Basin Selected Remedies requires construction of repositories for disposal of metals-contaminated soils, tailings, sediments, waste rock, debris, and treatment residuals (hereafter collectively referred to as waste), located at various remedial sites in the Upper Basin. Greg assisted in the drilling program and design of a new quarry site to obtain clean construction materials including, general fill, crushed gravel of various gradations, road surfacing materials, riprap for use in the repository construction.

Senior Geotechnical Engineer, Klau and Buena Vista Mines Superfund Site, EPA, San Luis Obispo County, California. As part of the detailed analysis of alternatives in the OU2 FS, a geotechnical survey and sampling event were conducted at the proposed repository site and at the Las Tablas Creek Ranch Reservoir (LTCRR) dam located just upstream of the Las Tablas Arm of Lake Nacimiento. The objective of the was to assess the current condition of the earthen embankment dam and the proposed retaining wall for the repository site using the results of the geotechnical drilling and lab testing. A slope stability analysis was completed for each site using the program SLOPE/W to evaluate the dam slopes and determine the relative factor of safety against failure under normal pool conditions on both the upstream and downstream slopes, surcharge pool (up to top of the dam), and earthquake scenarios. Greg reviewed the existing data on the original dam and

Education

MS - Civil Engineering, Kansas State University, 2009

BS – Geological Engineering, University of Missouri – Rolla, 2001

Registration

Professional Engineer: Illinois, Iowa, Kansas, Nebraska, Minnesota, Missouri, Wisconsin and Texas

Certifications

Intern Geologist: Kansas, 2011

OSHA, HAZWOPER, 2015

OSHA 8 Hour Supervisor, 2008

OSHA 10 Hour Occupational Safety, 2014

OSHA 40 Hour Occupational Safety, 2014

Trench and Excavation Safety, 2005

planned the geotechnical investigation to obtain additional data for performing the seepage analyses and slope stability analyses of the embankment.

Geotechnical Engineer, Gilt Edge Mine, EPA, Lawrence County, South Dakota. Greg was a staff engineer for the preparation of plans and specifications for the capping of the Gilt Edge Mine Site. The proposed remedy for the site included excavation and grading of mine waste using Forest Service land, construction of a composite geomembrane cover over the mine waste using rock from a highway construction project, and surface water controls and reclamation. Greg's duties consisted of the design of the drainage system, evaluation of the slope stability of the proposed cover, and evaluation of the proposed sources of cover material.

Geotechnical Engineer, Iron King Mine, EPA, Dewey-Humboldt, Arizona. Greg was a staff engineer for the proposed remediation of the Iron King mine superfund site. The tailing pile from the underground mine works at the Iron King site consists of approximately 3,500,000 cubic yards of material with a high concentration of arsenic. In 1964 the main tailing pile experienced an instability resulting in the contamination of nearby stream channel and the overtopping of a concrete gravity dam. Greg's duties included performing stability analysis on the tailings piles and the concrete dam to determine if modifications would be required to stabilize the site prior to future remediation efforts.

Geotechnical Engineer, Bonita Peak Mining District, USACE Omaha District, Silverton Colorado. Greg was a geotechnical task lead for the engineering evaluation and slope stability assessment of the Mayflower Mine site. The scope of work included a preliminary slope stability assessment of four tailings piles from the underground mine works at the Mayflower mine. Greg's duties included developing and directing the geotechnical investigation and laboratory testing plan. He also oversaw the preliminary slope stability analysis of the tailing's piles. The goal of the evaluation was to provide site selection guidance for a proposed repository.

Geotechnical Engineer, Golden Vertex, Moss Mine, Bullhead City, Arizona. Greg provided Geotechnical design services for the design/build of the Moss Phase open cut mine operation. Greg's tasks included evaluation of proposed excavation slopes, mine access, and the mining plan.

Project Engineer, Union Mine Repairs, Lenexa, Kansas. Greg was the project engineer responsible for the design of repairs for room and pillar mine to increase the mine stability. Tasks included the geotechnical investigation consisting of deep borings from the surface and borings within the mine, design of shotcrete pillar repairs and rockbolt roof reinforcement, preparation of drawings and project specifications.

Project Engineer, AGIA Properties, LLC, Lenexa Mine Evaluation, Lenexa, Kansas. Greg served as project engineer for this project that included a detailed mine evaluation in accordance with local city ordinances for a proposed development over a former limestone mine. Field activities included surface and mine reconnaissance. Other efforts included mine stability analyses, geotechnical site investigation, assessment of suitability for surface development, evaluation of drawings and specifications for required remedial mine repairs, and preparation of various reports and letters.

Winston S. Parker, PE

Discipline Lead: Hydraulics and Hydrology

Winston is a Licensed Professional Engineer in West Virginia (WV PE#027424) with 10 years of environmental engineering and construction experience. His work has included water and wastewater treatment, Superfund site impacted sediment analysis and water treatment plant operation, technical review, and hydrologic and hydraulic (H&H) design and modeling for rail/transit and mining clients. He has been the civil, hydrologic, and hydraulic design lead on numerous analyses for mine sites, channel designs, and model developments across the US, including the Asarco Ray Mine & Big Box Lake, Dicaperl El Grande and Soccoro Mines, and the Rio Tinto Holden Mine.

Winston is proficient with Civil 3D, ArcGIS with HEC-GeoHMS and HEC-GeoRAS, HEC-HMS, HEC-RAS, HydroCAD, and CulvertMaster. Moreover, he has prepared guidance to assist other young engineering staff with H&H modeling and design and wrote several step-by-step guides to a number of software.

Mining Projects – Civil, Hydrologic, and Hydraulic Design Lead, Asarco, Rio Tinto, Dicalite, etc., United States. Winston has been the civil, hydrologic, and hydraulic design lead on numerous analyses for mine sites, channel designs, and model developments across the U.S. in Arizona, New Mexico, and Washington, to name but a few. Designs have included site work, 1D and 2D hydrologic and hydraulic modeling, pumping and piping systems, channels, sediment transport modeling, the design and sizing of riprap, erosion and mitigation structures, stormwater management and storage structures. Project sites include but are not limited to Asarco Ray Mine & Big Box Lake, Dicaperl El Grande and Soccoro Mines, and the Rio Tinto Holden Mine.

State/Federal Projects – Civil, Hydrologic, and Hydraulic Design Lead, DEQ, EPA, Coeur d'Alene Trust, USACE, etc., United States. Winston has been the civil, hydrologic, and hydraulic design lead on numerous analyses for state/federal sites, reclamation and remediation designs, and model developments across the U.S. in Montana, New Jersey, California, and Idaho, to name but a few. Designs have included remediation and reclamation site work, dam analysis, 1D and 2D hydrologic and hydraulic modeling, channels, sediment transport modeling, the design and sizing of riprap, erosion and mitigation structures, and stormwater management. Project sites include, but are not limited to, DEQ's Red Lodge East Bench Mine, Coeur d'Alene Trust's Dudley Reach of the Coeur d'Alene River, New Jersey Department of Environmental Protection's Paulina Dam on the Paulins Kill River, and USACE's Eighteen Mile Creek.

Rail/Transit Projects – Civil, Hydrologic, and Hydraulic Design Lead, Union Pacific, Watco, etc., United States. Winston has been the civil, hydrologic, and hydraulic design lead on numerous analyses for bridge and culvert sites, channel designs, and model developments across the U.S. in Oregon, Texas, Kansas, Oklahoma, and Arizona to name but a few. Designs have included site survey using conventional, GPS, and UAV surveying techniques, 1D and 2D hydrologic modeling using continuous and event-based approaches in HEC-HMS (e.g., TR-55, SCS design storm, Unit Hydrograph, SCS CN, and SCS lag formula), Rational Method, regional regression equations, hydraulics and sediment transport

Education

BS – Civil Engineering, Montana State University, 2014

Registrations

Professional Engineer: West Virginia (2025), Montana (2021)

Certifications

SWPP Administrator

24-hour MSHA Surface Miner

40-hour OSHA HAZPOWER

10-hour OSHA Construction Safety & Health

CPR/First Aid

modeling using HEC-RAS to recommend replacement alternatives, and the design and sizing of channels, riprap, outlet structures, and pumping systems.

Project sites include but are not limited to Watco's Lawton, Sooner, and Neodesha subdivisions and Union Pacific's Brooklyn, Phoenix, and Anchorage subdivisions.

Other Water Resources Projects. Additional projects that Winston has been involved on have included sediment transport modeling, surveying, multi-disciplinary review and evaluation, troubleshooting and maintaining treatment system equipment including pumps, flowmeters, and equipment, database development, oversight, maintenance, sampling, and leadership and mentoring to young engineering staff.

Operator and Sample Team Member, Luttrell Water Treatment Plant, Rimini, Montana. Winston acted as a water treatment plant operator at the Luttrell Water Treatment Plant, part of the Upper Tenmile Creek Mining Area Superfund site. His responsibilities included operation and maintenance of the water treatment plant as well as sample collection and analysis. He provided leadership and mentoring for a summer intern plant operator. Winston also participated in several surface water and groundwater sampling events adjacent to the Luttrell Repository to evaluate the repository performance.

Desktop Technical Review Member and Sample Team Member, Butte Priority/Westside Soils Operable Units and Westside Soils Operable Unit (WSSOU) Reconnaissance and Sampling, Butte, Montana. As a review member, Winston participated in multi-disciplinary reviews of projects and associated plans for Westside Soils Operable Unit and Butte Priority Soils Operable Unit. In the Blacktail creek vicinity, he evaluated three tailings waste areas to quantify the aerial extent and depth of tailings and impacted sediments and, based on findings, developed a model for soil volume estimating. Winston used data from the Montana Bureau of Mines and Geology to develop a database of workings maps, mining claims maps, historical maps, presence of waste dumps, hydrologic features, shafts, audits, and geology. Following the Desktop Technical Review, Mr. Parker acted as a member of the surface-soil sampling field team in Butte, MT. He assisted in collecting over 3,000 sample points, while applying field analysis techniques including XRF and paste pH. Winston also supported sample shipment coordination, ensuring the proper guidelines and procedures were followed. When summer interns arrived, he helped train them on proper sampling techniques while providing leadership and mentorship.

Resident Project Representative, Wickes Residential Yard Removal Project, Wickes, Montana. Winston was the resident project representative on the Wickes Residential Yard Removal Project completed for the Montana Department of Environmental Quality (DEQ). Acting as RPR and providing full-time construction oversight, he ensured that all work was completed according to construction specifications, drawings, and bidding documents. Work included the excavation of one foot of contaminated cover soil from 1.2 acres of residential yard area, disposal in a licensed landfill, backfilling of clean cover soil in the previously excavated area, and revegetation. Winston was involved in all aspects of the project from inception to project completion, working closely with the contractor throughout each phase.

Dustin T. Klempel, P.E.

Discipline Lead: Water Treatment Process

Dustin is a chemical engineer with significant experience in the chemical, process, and environmental engineering fields with a focus in the oil, gas and mining industries. His experience includes industrial wastewater and remediation treatment system design; bench and pilot scale testing; field engineering during construction; and facility startup and operation. Dustin has performed numerous process designs for industrial wastewater treatment systems. His activities include performing treatability tests and on-site pilot tests, general process engineering, process design, equipment specification, and plans and specifications preparation.

Process Engineer, Industrial Wastewater Treatment for Acid Mining Drainage, Lincoln, Montana. Dustin assisted in the process design and construction of an industrial wastewater treatment facility to handle acid mine drainage near Lincoln, MT. Activities included preliminary system design, performing treatability tests, general process engineering, equipment specification, and startup and operations of the treatment facility.

Process Engineer, Industrial Wastewater Treatment, Various Locations. Dustin has performed numerous process designs for various industrial wastewater treatment systems. Activities include performing treatability tests and on-site pilot tests, general process engineering, equipment specification, and plans and specifications preparation.

Process Engineer, Industrial Wastewater Treatment for Natural Gas Produced Water, Rawlins, Wyoming. Dustin performed process engineering and design for an industrial water treatment plant for the treatment of coal-bed methane produced water near Rawlins, WY. The system was a mobile pilot unit used for testing reverse osmosis-based treatment technology. Tasks included design and construction of the system, on-site construction, plant operation and troubleshooting, and operator training.

Process Engineer, Industrial Wastewater Treatment for Natural Gas Produced Water, Central Wyoming. Dustin performed process engineering and design for an industrial water treatment process for the treatment of natural gas produced water in central Wyoming. The system was a large-scale mobile pilot unit. Tasks included system design, construction oversight, field engineering, system startup and operations, performing analytical testing, and operator training. The treatment process consisted of ion exchange and reverse osmosis technologies as well as additional proprietary treatment technologies.

Process Engineer, Industrial Wastewater Treatment for Coal-Bed Methane Produced Water, Sheridan, Wyoming. Dustin performed process engineering and design for an industrial water treatment plant retrofit for the treatment of coal-bed methane produced water in Sheridan, WY. Tasks included on-site pilot testing, process design of various treatment operations, interfacing with construction personnel, performing initial plant startup and troubleshooting, and operator training.

Process Engineer, Industrial Wastewater Treatment for Semiconductor Facility, Phoenix, Arizona. Dustin performed the process design and startup of an industrial wastewater treatment facility to handle wastewater containing arsenic and various metals at a facility in Phoenix, AZ. Activities included batch reactor and sludge handling systems

Education

B.S. – Chemical Engineering, Montana State University, 2003

Registration

Professional Engineer (MT15953): Montana, 2009

design, performing jar tests, general process engineering, equipment specification, technical drawing preparation, and plant startup.

Process Engineer, Industrial Wastewater Treatment for Metal Plating and Finishing Facility, Fullerton, California. Dustin assisted in the process design and construction of an industrial wastewater treatment facility to handle metal plating and finishing wastes at a facility in Fullerton, CA. Activities included microfiltration system design, coordinating jar and pilot tests, general process engineering, equipment specification, technical drawing preparation, and plant startup.

Process Engineer, Industrial Wastewater Treatment for Coal-Bed Methane Produced Water. Dustin assisted in the design, construction, and operation of a 100-gpm pilot plant using proprietary treatment technology based on reverse osmosis for the treatment of coal-bed methane produced water. He performed start-up and operated the process for a period of two months, until the pilot goals were achieved.

Process Engineer, Industrial Wastewater Treatment for treatment of Stormwater, Portland, Oregon. Dustin assisted in the design and operation of a RO pilot plant for the treatment of high-BOD containing stormwater for a client in Portland, OR. Activities included process design, pilot plant construction oversight, start-up, and operator training.

Project Engineer, Remediation Activities for Superfund Site, Butte, Montana. Dustin was solely responsible for overseeing fieldwork activities for the installation of three dozen piezometers for the Montana Pole Superfund Site. Piezometers were installed in order to further characterize the effectiveness of an operating pump and treatment system. Activities included logging coreholes, aiding and overseeing well installation, and client interaction.

Professional Activities

Member, American Institute of Chemical Engineering

Member, Engineers without Borders

Publications and Presentations

Klempel, D.T. “Microfiltration Treatment of Acid Rock Drainage.” Paper presented at the American Membrane Technology Association Annual Conference, San Diego, California, 2010.

Stephen Dunn

Process Engineering

Stephen works as a process design engineer to size and select equipment, size piping, select valves and instrumentation, and generate AutoCAD drawings for new and existing facilities. He has experience working in pharmaceutical, microelectronic solutions, and Process Safety Management (PSM) covered manufacturing. Stephen has designed and updated steam generation, compressed air generation, cooling water circulation, and process waste removal systems for new and existing facilities. His experience includes reviewing vendor submittals for valves and equipment, creating models using thermodynamics and transport principles to aid in process design, and helping to create and revise scopes of work for projects.

Process Engineer, Modeling of Existing Vapor Recovery System, Chemical Solvents, Cleveland, Ohio. This project was to assess the existing vapor recovery system for the Denison area tank farm to ensure compliance with EPA Consent Decree and provide recommendations on system modifications when guidelines were not met. Stephen conducted an engineering evaluation of the closed vent system (CVS) for Denison tanks 33 through 48 by utilizing hydraulic modeling of the systems with Aspen HYSYS. The system included all conservation vents and emergency vents on these tanks. He developed and ran the models, back-checked calculations utilizing mass and energy balances, and created a report summarizing the method and results of the study.

Process Engineer, Design for Gas-Chemical-Slurry (GCS) building chemical and water waste systems and utility piping distribution, Confidential, Texas. Stephen acted as the process lead for the design of the GCS building for a semiconductor fabrication facility. He sized and designed the RCRA system for the GCS including dedicated lift stations and local discharges from process equipment. He reviewed client drawings and documentation, created, updated and maintained drawings and ran client meetings. During construction services he completed engineering reviews and submittals and RFIs and conducted cross-discipline coordination as required. General breakdown of systems that were under his scope: water, waste chemicals (H2SO4, H3PO4, CuSO4, and waste solvents), process air, general nitrogen, process water, purified gasses (N2, H2, Ar).

Process Engineer, Superheated Steam Piping and Safety Relief Analysis, B&W, Barberton, Ohio. Stephen performed a hydraulic analysis to determine required pipe size and fitting arrangement for a superheated steam supply. He also performed a safety relief valve sizing analysis on the same superheated steam supply.

Process Engineer, Design and Heat Gain Analysis on a Recirculating Pump System, Cabot, Franklin, Louisiana. Stephen sized and selected pumps for a dual process and fire suppression water supply system. He utilized a heat transport model to calculate the dynamic heat gain of the pump recirculation system and determined the tie-in point of the recirculation line. Stephen reviewed preliminary pump quotes, created an instrument list, and generated P&IDs of the entire system.

Process Engineer, Cooling Water Extraction and Injection Systems Design, Kaiser Aluminum, Spokane, Washington . The project involved process design of an extraction well and injection well system that is to be utilized for process cooling. Stephen sized

Education

BS – Chemical Engineering, Cleveland State University, 2016

multiple control valve legs, created instrument and equipment lists, performed hydraulic analyses on the new system for pipe sizing, and generated P&IDs of the system.

Process Engineer, Design for Expansion of Existing Cooling Water System for New Furnace Cooling, Arconic, Alcoa, Tennessee. Stephen performed a mass and energy balance around the existing cooling water system. He used this information to determine system capacity and to determine the new demand for selection of new cooling tower cells. Stephen performed a hydraulic analysis to audit the existing piping network for the increased flow as well as to size the new supply piping to the new furnaces. He also helped to generate the cooling tower specification and work on feasible piping arrangements to ensure process still works as designed.

Process Engineer, Water Treatment for Boiler Feed Make-up, Iowa Fertilizer, Wever, Iowa. Stephen performed mass and energy balances to determine bottle necks in the boiler feed make-up system. Hydraulic principles and thermodynamics were used to develop solutions for bottlenecks. The bottlenecks and solutions were compiled into a report. Preliminary equipment specs were generated, as was a preliminary instrument list.

Process Engineer, Wastewater Treatment, Cargill, Blair, Nebraska. Stephen generated a detailed instrument list for a wastewater treatment system. He created instrument data sheets/specifications for each instrument per Cargill standards. Stephen performed a check on the Piping and Instrumentation Diagrams (P&IDs) for the process to ensure new system design was correctly represented.

Process Engineer, Process Water Treatment, HTI, Pasadena, Texas. Stephen created instrument data sheets and specifications for a river water treatment system. He performed a preliminary instrument selection for the instruments on the system and obtained budgetary quotes for the instruments.

Prior to CDM Smith

Process Engineer, General, Avantor, Paris, Kentucky. Stephen served as Senior Process and Manufacturing Engineer for a pharmaceutical (excipients and active pharma ingredients (APIs)) and microelectronic solutions facility. The facility consisted of the following manufacturing areas: Solvents, Aqueous Solutions (cGMP), microelectronic solutions, acids, and drys down packing/super sack. Helped corporate project engineers with facility expansions by reviewing project scopes, drawing sets and designs.

Process Engineer, Process Safety Management - General, Avantor, Paris, Kentucky. Stephen led HAZOPs, PSSRs, PHAs and PSM Audits as the site process engineer. He created and managed MOCs that impacted PSM covered areas. He led a project that reassessed the site electrical classification and led projects to ensure area compliance. He created the site grounding preventative maintenance (PM) program utilizing RAGAGEP and referencing NFPA, NEC and IEEE standards. He updated site grounding drawings to as-built status as a part of this project.

Process Engineer, New Tire Manufacturing Facility, Company Confidential, Country Confidential, Europe. Steven performed process design of tire producing facility including tire building, final finish and curing area. Process design of supporting systems such as boiler system, compressor system, cooling water system, Nitrogen generation, and process waste handling. Utilized thermodynamic and fluid mechanic principles to perform the relevant sizing for pipes, valves, pumps, tanks, towers, boilers, etc.

Joseph M. Zanotti, PE

Structural Engineering

Joe has 39 years of structural engineering experience with engineering, consulting and design-build firms serving municipal, international, industrial, electric utility, transit authority, and commercial clients. He has worked extensively on the structural design, construction, and restoration of wastewater treatment plants and sanitary structures, canals, hydraulic structures, airport deicing facilities, industrial and chemical facilities, power plants, public transit facilities, multi-level parking garages, and other commercial buildings. His technical experience includes the structural design of steel, masonry, cast-in-place, precast, and post-tensioned concrete buildings, structures and foundations, design of above and below grade sanitary structures, canal structures and other hydraulic structures, specification preparation, shop drawing preparation, estimating, and project design coordination and technical management. His experience with construction includes coordination, construction monitoring, and quality control programs. His field experience includes structural condition surveys, testing, evaluation, and repair of many types of deteriorated steel, concrete and precast concrete buildings and structures.

Senior Structural Engineer, Cuyahoga River Restoration Project, City of Kent, Ohio. Joe led and performed the structural design and rehabilitation of new and existing structural components for this stream, dam, and park restoration project. Design work included reanalysis of an existing historic cut stone arch dam and abutments, design of a water trough behind the dam, modifications to the dam crest to create waterfalls, stone repair details to the historic dam and abutments, design of foundations to support a new pump house located in the downstream pool, and design of a mechanically stabilized earth retaining wall using existing cut stones from a historic spillway wall. Elimination of the pool behind the dam and spillway modifications required that one massive stone abutment be strengthened against sliding to resist increased forces of the arch dam. Joe strengthened the abutment by designing post-tensioned rock anchors that were installed in the abutment by drilling through the stones, anchoring into the top of the abutment and into the bedrock below. All details were developed with sensitivity to the historic nature of the dam.

Senior Structural Engineer, Lake Oneida Dam Spillway Restoration, Pennsylvania American Water, Butler, Pennsylvania. Joe performed the field inspection of the existing trapezoidal-shaped concrete lined spillway that carried the overflow for a 35-foot-high earth dam. He also prepared the design documents and specifications for the repair and replacement of 140 feet of the spillway length. Energy dissipating baffle blocks were also repaired and replaced as required.

Lead Senior Structural Engineer, Nhieu Loc – Thi Nghe Basin Canal Rehabilitation, Ho Chi Minh City, Vietnam. This $250 million project was executed as a multi-phased project for the Department of Transport and Public Works of HCMC and for the World Bank. Funding was provided through World Bank Loans. It was formulated to alleviate flooding and remove untreated wastewater, solid waste and contaminated soils from the 9 km canal. One portion of the final design consisted of the structural and geotechnical design of nearly 16 km of retaining walls located in the canal that were required for the widening and deepening of the canal.

Education

BS – Civil Engineering, Pennsylvania State University, 1980

Graduate Studies for MSCE

University of Pittsburgh

Registration

Professional Structural Engineer: District of Columbia, Illinois (1987), Ohio, Pennsylvania, Maryland, Massachusetts, Michigan, New Jersey, New York, Virginia and West Virginia

Prestressed, precast concrete sheet piles, up to 1.2 meters thick with embedment depths up to 25 meters, were selected for the walls along the canal. In local zones, cast-in-place concrete retaining wall structures supported by precast and bored concrete piles were designed to allow new interceptor pipes to pass under the walls. The widely varying soil conditions and the presence of extremely soft clays and loose sands required the design of extensive zones of soil improvement utilizing soil pressure grouting methods. The sheet pile walls had to be designed and configured to interface with nine new bridges, 62 underground crossings of a new 3-meter diameter interceptor pipe, and 57 new CSO structures all of which were scheduled to be built prior to the installation of the canal walls. Also, the new walls had to be configured to pass under 13 existing bridges without significantly impacting existing bridge foundations.

Joe led and performed the complete structural design of the canal walls. He developed and evaluated conceptual wall systems, performed conceptual construction cost comparisons, and prepared the design and drawing documents and written specifications for all walls and soil improvements required. In all, 234 structural drawings were developed. He also managed local Vietnamese engineering and drafting staff, closely coordinated and oversaw the work of the project's geotechnical engineer located in Bangkok, Thailand, solicited input from local Vietnamese contractors and precast concrete fabricators, prepared formal Design Report submissions for the client, and assisted in the preparation of final Construction Cost Estimates, Prequalification Packages, and Tender Documents. Joe also gave formal presentations regarding the structural design approaches used to large groups of the Vietnamese government's staff.

Senior Structural Engineer, Trinity River Restoration, Fort Worth, Texas. Joe provided senior structural review and evaluation of the civil and structural design for this project. This large project was undertaken to improve the water quality and flow of a portion of the Trinity River. Elements of the project included the design of a new 1.2 miles long river bypass section bounded by earthen levees, two new large 60-foot-high flood control gates, a large underground pumping station, a new concrete dam in the river, new pedestrian bridges over the river, numerous utility and bridge relocations, property reclamations, and new concrete retaining walls to support new parks and roads along the river.

Senior Structural Engineer, Various Projects, Advanced Wastewater Treatment Plant (WWTP), District of Columbia Water and Sewer Authority, Washington, DC. Joe led and performed the complete structural design for several plant structures and buildings at this WWTP. Design work included the design of and modifications to pump stations, design of a three-story concrete frame building housing NaOH tanks, sluice gate modifications, concrete and steel repairs to grit buildings and underground structures, and roadway retaining walls.

Lead Senior Structural Engineer, Stage II Light Rail Transit System – Overbrook Line, Port Authority of Allegheny County, Pittsburgh, Pennsylvania. Joe led the structural design and specification for the $350 million, 5.2-mile construction/reconstruction of the Overbrook LRT line corridor. Joe's tasks for this project included the structural design and specification of over 5 miles of retaining walls, ten passenger stations, two steel beam pedestrian bridges located over creeks, and foundations for numerous site structures. The types of retaining walls included conventional cast-in-place concrete walls, anchor tie-back steel soldier piles with precast concrete lagging, concrete cantilever walls, and mechanically stabilized earth walls.

Kip R. Hall, PE

Construction Manager

Kip joined CDM Smith in 2017 to lead and manage construction engineering inspection services from our Charleston, WV office. A construction engineer, Kip's professional career is centered around delivering top-notch, high-quality infrastructure to the clients he serves. He has dedicated his career to the engineering and construction of roadways and bridges and has a thorough understanding of all aspects of transportation infrastructure. He interprets plans and specifications and possesses the ability to visualize a complete construction project from a set of construction plans. Kip is proficient in the performance of algebraic, geometric, and trigonometric calculations related to transportation engineering, as well as being a subject matter expert for constructability and staging on road and bridge projects. Kip has thorough knowledge and understanding of project controls, including CPM scheduling, cost estimating, contract administration, stakeholder coordination and change order and claims analysis. Kip has demonstrated skills in negotiating, coordinating, and directing work of subcontractors, and in developing strong working relationships with general contractor personnel, subcontractors, inspectors, and other related parties. He possesses excellent leadership and management qualities and always promotes safety first.

CDM Smith

Construction Manager/ Engineer (March 2017-Present)

Kip is currently serving CDM Smith as Construction Manager on multiple ongoing highway and bridge construction projects throughout West Virginia. Kip is responsible for:

- Recruiting/training and mentoring key construction inspection staff.
- Determine contract requirements and construction management / inspection staffing needs, project, and staff supervision, while providing technical guidance and mentoring to staff to deliver quality projects.
- Overseeing overall construction project performance including financial success, scheduling, subcontract management, and client relations.
- Managing cost control systems, reviewing, and analyzing plans, facilitating the bidding and negotiations process with a general contractor, reviewing all forms (bidding, construction, or other) of requests for information (RFI's), examining and negotiating change orders, and reviewing and providing comment on submittals.
- Overseeing day to day oversight of construction activities, progress estimates and payments, and project closeout.
- Negotiating, coordinating, and directing work of subcontractors, and developing strong working relationships with general contractor personnel, subcontractors, inspectors, and other related parties.
- Managing and monitoring project schedules within budget guidelines, progress, and costs to ensure projects are completed on time. Managing and overseeing contractor and performance throughout construction phase.

Education

BS – Civil Engineering, West Virginia Institute of Technology

AS – Electrical Engineering Technology, West Virginia Institute of Technology

Registration

Professional Engineer:

West Virginia (#15176)

Ohio (#77569)

Maryland (#51120)

Certifications

Fundamentals in Engineering (FE)

West Virginia Division of Highways Compaction Technician

PCC Inspection

AP Technician

Steel Tank Institute

Years' Experience

Total: 34
CDM Smith: 7

Kip's project experience includes:

Project Manager/ Beckley Widening, West Virginia Parkway Authority (WVPA), Raleigh County, West Virginia. Kip managed CEI services for West Virginia's Parkway Authority's Beckley Widening project. The roadway reconstruction project involved expanding approximately 8 miles of Interstate 64/77, West Virginia's tolled highway to alleviate congestion and improve safety.

This $105 million project was the first General Obligation Roads to Prosperity project awarded by the WVDOT. The CDM Smith team was responsible for on-site project management, inspection, and documentation services. The scope of services included project management, quality control of construction inspection, documentation utilizing SiteManager, review of contractor's CPM schedule, and other inspection related services. Kip worked closely with the QA consultant and WVDOH management on a day-to-day monitoring of project performance. Kip was also responsible for schedule, managing inspection staff needs, and invoicing.

Project Manager/ I-70 Bridges, West Virginia Division of Highways, Ohio County, West Virginia. CDM Smith provided CEI services for the I-70 Bridges in Ohio County. This $215 million project included the rehabilitation of 26 bridges along the I-70 corridor and replacement of the Fulton Bridge, located just to the east of the Wheeling Tunnel. The I-70 Bridge project is the most significant project funded by the Roads to Prosperity program and will enhance safety, improve mobility, and support economic development. CDM Smith's CEI services included project management, inspection, and documentation services. Kip's role included project management, staffing, contractor's schedule review, staff management and overall inspection performance.

Project Manager/ Statewide and District Specific Construction Inspection Services, West Virginia Division of Highways (WVDOH), West Virginia. Kip is managing multiple task orders under the Statewide and District Specific Construction Inspection services contract for the WVDOH. The inspection task order assignments include bridge replacement, highway widening, resurfacing and safety projects. As project manager, Kip has served WVDOH Districts 2, 4, 6, 9 and 10. His responsibilities include providing key inspection staff, scoping, and negotiating task orders, providing progress reports and overall inspection performance of assigned task orders.

Prior to CDM Smith

Construction Engineer/Assistant DE/DM, West Virginia Department of Highways District 7, Weston, West Virginia. For this project, Kip served as the Construction Engineer in the Administration of Contracts from start to finish. He was responsible for assigning and overseeing all tasks to staff and providing training related to construction, resurfacing, utilities, materials and survey. He was also responsible for coordinating meetings including pre-construction, interim and final inspections with stakeholders and agencies. Other tasks included: coordinating field reviews and inspection of all projects let to contract; representing the agency with the public and legal proceedings on projects let to contract. Additional duties included providing inspection report reviews, using SiteManager and ProjectWise, reviewing change orders, and providing written estimates; coordinating Project Schedule (P6) reviews; coordinating progress meetings and contract correspondence; and assisting with problem resolutions.

Stephen R. Dent, PhD

Mining Scientist

Stephen has over 18 years of experience designing, implementing, and evaluating data from monitoring programs involving impacted sites. Stephen's expertise involves evaluating fate and transport of metals, including biotic and abiotic transformation analysis, food-web uptake assessments, and sediment amendment treatability studies. He has extensive experience with engineered water quality improvement projects that require the monitoring of nutrients and metals. He also developed, managed, and operated a trace metals analytical laboratory. Stephen's experience includes working in both active open pit mining properties and abandoned mine sites. He has extensive experience in data analysis, report and manuscript preparation, and technical presentations of research at professional regional and national conferences.

Project Engineer/Scientist, Black Butte Mine Superfund Site, Lane County, Oregon. The Black Butte Mine is an abandoned volcanic hosted mercury mine with a widespread area of mercury in soil and sediment, including a public reservoir located 13 miles downstream. Stephen supported the completion of the Remedial investigation on the Mine Site source area and is now the technical specialist/mercury subject matter expert for the ongoing Remedial Investigation of the downstream watershed and reservoir, with particular focus on mercury in river and reservoir sediments. Stephen worked to evaluate mercury partitioning within sediment porewater and subsequent mercury methylation to quantify sediment contribution of mercury to the food web. He has designed and written planning documents, has been an ongoing field team leader/member for the ongoing remedial investigation at the site. He functions has the technical interface the EPA and USGS technical teams. Stephen is leading the technical mercury evaluations and authored/coauthored technical memoranda and multiple RI reports related to mercury chemical transformation, bioavailability, and mercury TMDLs. Stephen designed, implemented, and lead the evaluation of a multiphase sediment amendment treatability study, using both benchtop microcosms and mesocosms. He has worked to implement and evaluate new and innovative mercury assessment tools such as stable mercury isotope fingerprint source identification, radiolabeled sediment dating, mercury methylation studies, food web bioaccumulation and energy transfer evaluations, mercury selective sequential extractions (speciation group classifications), and mercury vapor screening assessments.

Project Engineer/Scientist, Klau and Buena Vista Mine Superfund Site, San Luis Obispo County, California. Stephen provided technical support for issues relating to mercury and water chemistry for the investigation at the Klau and Buena Vista Mine SEDA investigation. He developed and gave technical support on planning documents, including the Work Plan, Work Plan Addendum, QAPP, and QAPP addendum. He authored the year one Data Summary Report and assisted in writing the final report for the two-year Sediment Erosion and Deposition Assessment and Contaminant Loading Evaluation which was a supplement to the initial Remedial Investigation, and a Feasibility Study Scoping Memorandum to prescreen remedial technologies in preparation of the pending full Feasibility Study. Stephen designed and implemented a mercury methylation and food-web connectivity assessment linking sediment methylmercury to zooplankton for a small reservoir on site to help answer specific questions related to mercury fate and transport.

Education

PhD – Civil Engineering, Washington State University, 2012

MS – Environmental Engineering, Montana Tech of the University of Montana, 2005

BS – Environmental Engineering, Montana Tech of the University of Montana, 2003

Certifications

Hazardous Waste Operations and Emergency Response, 2013

Training

Radiation Safety for Handling Radioactive Substances, WSU, 2010

Seminar for MERX-T&M, Total & Methylmercury Analytical System, Brooks & Rand 2009, 2010

Trace Mercury Field Sampling Workshop, Frontier Geosciences, 2005

He assisted stormwater sampling over a two-year period. He provided training for field personnel in the use of trace sampling techniques such as "Clean Hands Dirty Hands" for trace mercury sampling. He was field team leader for two specialized reservoir assessments and managed a laboratory sediment oxygen demand assay. He has also performed sample management for many of the sampling activities at the site.

Project Engineer/Scientist, Formosa Mine Superfund Site, EPA, Douglas County, Oregon. The Formosa Mine is an abandoned copper, zinc, lead, and silver mine (volcanogenic massive sulfide deposit) with acid rock drainage (ARD) and leached metals impacting the groundwater and the adjacent watersheds. Stephen was a project engineer on a passive bioreactor treatability study where he constructed, conducted routine operation and maintenance, and led a trace mercury transformation assessment. He wrote the final technical memorandum of the treatability study results and presented the findings at the National Conference of Mining Impacted Waters. He performed operations and maintenance of the stream monitoring stations at the site for 3-1/2 years. He was field team leader for 2-1/2 years of biannual stream, seep, and monitoring well sampling. He assisted in writing and developing Sample Plan Alteration Forms and Data Quality Objectives for site assessments. He performed sample management for many of the sampling activities.

Project Engineer/Scientist, Blue Ledge Mine Superfund Site, California. Stephen assisted in the operations and maintenance of a treatability study using a variety of biochemical reactors to treat mining influenced water running off the site. He was field team leader and sample manager during multiple sampling events over the course of the evaluation.

Project Engineer/Scientist, Butte Priority Soils Operable Unit, Silverbow County, Montana. Stephen performed quality control checks on stormwater modeling runs and evaluated results to support help write the Technical Impracticability Evaluation Report.

Project Engineer/Scientist, Wappinger Creek Superfund Site, New York. Stephen is the RI mercury subject matter expert of a tidally influenced river with contaminated sediments. He designed and implemented surface sediment mercury methylation study to complete the fate and transport investigation for the Final RI Report. He coauthored the RI and is now a technical lead for the FS.

Project Engineer/Scientist, Pierson's Creek Superfund Site, New Jersey. Stephen was the RI mercury subject matter expert for remedial investigation of a highly contaminated creek which is a key part of City of Newark stormwater system. He performed data evaluation of mercury fate and transport, including selective sequential extractions (speciation group classifications) in preparation for the Final Remedial Investigation Report.

Kent S. Whiting, LG
Geologist

Kent is an aqueous geochemist with 30 years of experience in the environmental field. He has worked on projects at a variety of environmental sites, including current and former mining, wood-treating, foundry, landfill, underground storage tank (UST), and miscellaneous industrial sites. His responsibilities have included designing and conducting treatability studies, planning sampling programs, leading sampling teams in the field, geochemical modeling, database management, and multivariate and landfill statistical evaluations. He has also provided litigation support, including technical review of expert opinions, formulation of deposition questions, and technical support during deposition testimony. He has had extensive experience performing equilibrium modeling using PHREEQC, MINTEQA2, and SOLMINEQ over the last 30 years.

Project Scientist, Acid Mine Drainage Remediation. Kent is experienced in the use of passive treatment technology for the remediation of acid mine drainage. He has acted as a passive treatment expert for EPA and has provided technical support during negotiations with the potentially responsible party (PRP). His experience has included conceptual design, substrate selection for pilot-scale systems, interpretation of cell performance, and operational modifications for numerous passive water treatment systems. Projects have included the Burleigh Tunnel site near Silver Plume, CO, the Grey Eagle Mines at Happy Camp, CA, the Basin Creek Mine in Montana, a large gold mine in Peru, as well as systems in Idaho and Arizona.

Project Scientist, Former Mining Sites. Kent's experience includes a large number of studies and investigations at former mining sites. He has performed geochemical modeling on the interaction between groundwater and tailings at the Sharon Steel Mill/Smelter Site near Midvale, UT, and modeled the effects of mixing, evaporation, and interaction with sulfides of acid mine drainage at the Penn Mine in northern California. Other modeling activities have included triple layer adsorption modeling for waters at the Berkely Pit near Butte, MT, modeling of land application acid mine drainage treatment at the Noranda Montanore Site in Montana, and acid mine drainage neutralization modeling at the Grey Eagle Mines at Happy Camp, CA.

Project Scientist, Sample Analysis. In conjunction with the University of Colorado, Kent helped develop the use of the electron microprobe for allocation, bioavailability, and fate and transport of metals at environmental sites. He has over 200 hours of experience analyzing samples from mining, milling, foundry, scrap metal, and other industrial sites. Specific sites have included the Blackbird mining/milling site near Salmon, Idaho, the Norfolk scrap metal/municipal ash site in Norfolk, VA, the Central Artery Project in Boston, MA, and many others.

Project Scientist, CR Kendall Environmental Impact Statement (EIS), Montana Department of Environmental Quality, Montana. Kent is responsible for directing a team of remediation and water treatment specialists in developing a post-closure EIS for the CR Kendall Mine near Hilger, MT. In addition to his duties as project manager, Kent also provided geochemical and water treatment evaluations for the site.

Education

MS, Geochemistry, Colorado School of Mines, 1992

BS, Geology, Ohio State University, 1988

Registration

Licensed Geologist, Washington State #2665

Specialties

Geochemical Evaluations, including ARD evaluations and equilibrium modeling

Arsenic Fate and Transport

1D transport modeling

Kinetic modeling

Solid-solution modeling

High Salinity modeling using SOLMINEQ and PHREEQC

CDM Smith

Project Scientist, Groundwater Monitoring Statistics for RCRA Sites. Kent is thoroughly familiar with both EPA and ASTM groundwater monitoring statistical procedures for RCRA sites. His experience has included detection, compliance, and remedial action monitoring at sites in California, Georgia, and Montana, as well as review of proposed monitoring plans at sites in Illinois. Other statistical evaluations have included multivariate analyses to determine the sources of lead contamination at the California Gulch Site at Leadville, CO, and to trace the migration of organic contaminants into a lake in northern Michigan.

Project Scientist, Asarco El Paso Smelter, El Paso, Texas. As part of a groundwater treatment feasibility study, Kent evaluated site data, performed treatability bench-scale investigations, performed EMP analyses, and wrote a site conceptual model (SCM) to explain the fate and transport of arsenic at the site. The SCM was used to evaluate potential remedial alternatives for the site.

Project Scientist, Asarco East Helena Smelter, East Helena, Montana. As part of the evaluation of using a permeable reactive barrier (PRB) to treat arsenic in groundwater at the site, Kent designed a bench-scale evaluation to test innovative treatment media for use in PRBs.

Project Scientist, Sherwin-Williams Site, Emeryville, California. As part of the evaluation of remedial alternatives for the site, Kent performed EMP analyses and used other analyses to produce a SCM to explain the sources of arsenic to groundwater and the attenuation processes occurring in the subsurface. The SCM was used to evaluate various remediation technologies proposed for the site.

Publications

Whiting, K.S., Anton, N., and R.L. Olsen. 2019. Evaluation of an Innovative Calcite Precipitation-Based Passive Treatment Technology at the Bunker Hill Mining and Metallurgical Complex Site, Coeur d'Alene, Idaho. Reclamation Matters Magazine, Fall 2019.

Whiting, K.S. and N. Anton. 2018. The Use of Calcite Precipitation to Treat Zinc-, Lead-, and Cadmium-bearing Mine Drainage at the Rex Mine Site Coeur d' Alene, Idaho.

Whiting, K.S. and R.L. Olsen. 2013. *Evaluation of Solidification/Stabilization (S/S) Methods for Coal Combustion Fly Ash.* Presented at the annual EPRI Conference and Meeting, September 24, 2013. Kansas City, MO.

Whiting, K.S., and P.J. Evans. 2011. Evaluation of the Factors Influencing the Particle Size and Reactivity of Iron Sulfides within Biowalls. In International Symposium on Bioremediaton and Sustainable Environmental Technologies, ed. H. V. Rectanus and R. Sirabian. Reno, Nevada: Battelle Memorial Institute.

Whiting, K.S., Klempel, D., and R. Kimball. 2011. Treatment of Antimony and Arsenic within Mine Water from the Drumlummon Mine, Montana Using Titanium Dioxide Adsorption Media. Presented at the American Association of Mining and Reclamation (ASMR) Conference, Bismarck, ND, June 12-16, 2011.

Whiting, K.S., Klempel, D. and W. Jepson. 2011. Metals Attenuation in Response to Groundwater Mixing and Iron Oxyhydroxide Precipitation Down-Gradient of the Troy Mine Tailings Facility, Troy Montana. Poster Presentation, National Groundwater Association (NGWR) Conference, Baltimore, MD, May 1-5, 2011.

Felipe S. Contreras, PE, CME, CFM
Floodplain Manager

Felipe is a dedicated and highly skilled Civil Engineer who joined CDM Smith in 2024 and has 25 years of experience in integrated water resources management, specializing in the design and construction management of drinking water treatment and distribution systems, wastewater treatment and collection systems. He has a proven track record in leading successful water projects, managing teams, and ensuring regualtory compliance with industry standards. Felipe has expertise in utility efficient operation and advanced hydraulic modeling. He is proficient in preparing comprehensive engineering designs, budgets, plans, specifications, schedules, and procurement of grants. His expertise also includes adept handling of development application reviews and securing Federal, State, and local permits for a diverse range of projects. His support extends to strategic planning, project management, and client relationship management, allowing for a cohesive and efficient operation across the entire water practice.

Project Manager, Process and Operation Improvements at Pequannock Water Treatment Plant (PWTP), City of Newark, Union County, New Jersey. Felipe is currently leading the plant startup, SCADA instrumentation implementation, and closeout to the project.

Prior to CDM Smith

Worked for Kleinfelder (2015-2022)

Project Manager and Design Engineer, Trenton-Mercer Airport, Wetlands and Riparian Zone Restoration, Mercer County, New Jersey. Felipe designed and developed the specifications for the Wetlands and Riparian Zone Restoration of approximately 10 acres of forested wetlands and riparian zone. Scope of work included permitting and construction administration for the project.

Project Manager and Design Engineer, Little Egg Harbor Municipal Utilities Authority, Pump Station No. 7 Upgrades, Little Egg Harbor, New Jersey. Felipe designed the project. The work includes the construction of a new wet well including pumps, a new electric grinder, and the installation of flooding protection systems to protect the electrical/generator room and chain link fence around the property.

Remington and Vernick (2007-2015)

Project Manager and Design Engineer, Little Egg Harbor Municipal Utilities Authority, Radio Road Bride Relocation Utility (Water and Sewer), Little Egg Harbor, New Jersey. Felipe designed and developed the specifications for the relocation of a 12" water main and an 8" sanitary sewer force main under the South Branch River. The design included a 420' LF of directional drilling and 350' of water and sewer main installation.

Project Manager and Design Engineer, Little Egg Harbor Municipal Utilities Authority, Water Treatment Plant Upgrades at Radio Road, Little Egg Harbor, New Jersey. Felipe designed and developed flood proofing upgrades for the WTP, including structural walls, flood barriers and a new well with all associated equipment to comply with new Base Flood Elevations. Project also included the decommissioning of a well.

Project Manager and Design Engineer, Lacey Township Municipal Utilities Authority, Beach Boulevard Bridge Utility Relocation (Water and Sewer), Forked River, New Jersey. Felipe designed and developed the specifications for the relocation of

Education

MSc, Hydraulic Resources, University of Los Andes, 2000

BS, Civil Engineering. University of Los Andes, 1999

Registration

Professional Engineer: New Jersey, Pennsylvania, and Massachusetts

Certifications

Certified Municipal Engineer: New Jersey

Certified Floodplain Manager: US

Honors/Awards

City of Newark Consultant Engineer of the Year - 2023

Professional Affiliations and Training

American Society of Civil Engineers (ASCE), National Society of Professional Engineers (NSPE), New Jersey Society of Civil Engineers (NJSCE), Association of State Floodplain Managers (ASFPM), New Jersey Association for Flood Plain Management (NJAFM), American Water Works Association (AWWA), Water Environmental Federation (WEF).

Software Languages

Hydraulic Modeling (Epanet, WaterCad, SewerCad)

GIS, AutoCAD, ArcView, VBA, Visual Basic

Linguistic Languages

Fluent in English and Spanish

a 16" water main and a 12" sanitary sewer force main under the South Branch River. The design included a 400' LF of directional drilling and 150' of water and sewer main installation.

Project Manager and Design Engineer, Lacey Township Municipal Utilities Authority, HMGP Pump Station Upgrades and Emergency Generators, Forked River, New Jersey. Felipe submitted grant application, designed, and developed plans and specifications for the electrical upgrades of four pump stations that were affected by Super Storm Sandy; work included the procurement of four portable generators.

Project Manager and Design Engineer, Bennett Cabin Restoration, Point Pleasant Borough, New Jersey. Mr. Contreras designed and developed specifications for the interior and exterior restoration of the Bennett Cabin.

Project Manager and Design Engineer, Well No. 8 and Well No. 10 improvements, Borough of Seaside Park, New Jersey. Felipe designed and developed plans and specifications for the electrical and general repairs after Super Storm Sandy. This project included flood-proofing the building.

Project Manager and Design Engineer, DPW Building Reconstruction, Borough of Seaside Park, New Jersey. Felipe designed and developed plans and specifications for the electrical and general repairs after Super Storm Sandy. This project included flood-proofing the building.

Project Manager and Design Engineer, Avenue Pier Reconstruction, Borough of Seaside Park, New Jersey. Felipe designed and developed plans and specifications for the reconstruction of the pier after Super Storm Sandy.

Project Manager and Design Engineer, Floodplain Management Service, Borough of Seaside Park, New Jersey. Felipe served as the Floodplain Manager for the Borough. Prepared and reviewed substantial damage determinations, elevation reviews, community rating system record keeping and ordinance support.

Project Manager and Design Engineer, Bayside Beach Maintenance Dredging and Bulkhead Replacement, Lacey Township, New Jersey. Felipe designed and developed specifications for the maintenance dredging of the 700 LF lagoon entrance and the replacement of 200 LF of bulkhead. The New Jersey Department of Environmental Protection General Permit for coastal development, soil erosion and sediment control, and the US Army Corps of Engineers General Permit were completed for this project.

Project Manager and Design Engineer, Worden's Oyster Pond Maintenance Dredging, Lacey Township, New Jersey. Felipe designed and developed specifications for the maintenance dredging of the 1,600 LF entrance lagoon. The New Jersey Department of Environmental Protection General Permit for coastal development, soil erosion and sediment control, Tidelands Permit and the US Army Corps of Engineers General Permit were completed for this project.

Project Manager and Design Engineer, Stout's Creek Maintenance Dredging, Lacey Township, New Jersey. Felipe designed and developed specifications for the maintenance dredging of the 900 LF entrance lagoon. The New Jersey Department of Environmental Protection General Permit for coastal development, soil erosion and sediment control, Tidelands Permit and the US Army Corps of Engineers General Permit were completed for this project.

John Paravati

Rights-of-Way/Easements

John has spent his entire 38-year career at CDM Smith specializing in the development and monitoring the quality of CADD files and drawings for civil and structural engineering-related design projects (plans, specifications, and estimates; right of way; erosion and sediment pollution control; maintenance and protection of traffic, signing and pavement marking; and drainage).

John has performed as a CADD designer for the following projects:

Advanced Designer, S.R. 0095 Section BS5, PennDOT, Philadelphia, Pennsylvania. John was the lead designer for the Gap ROW plan and Final ROW plan for the I-95 Section BS5 project. His primary responsibilities included the oversight and completion of ROW plans for the I-95 project. He was responsible for calculating areas of Take and Deed calculations and produced color plots for client discussions while following client standards; conforming to DM-3 guidelines and District 6 preferences, while revising plan sets per District comments from the PM, survey unit, ROW unit, and utility unit, and DM-3 Plans Checker comments; and generated innovative ideas and solutions to meet and exceed the projects plan presentation. He also was responsible for revising construction, drainage and cross section plans related to plan presentation.

Advanced Designer, S.R. 0080 Section 08B, PennDOT, Luzerne/Carbon, Pennsylvania. John was responsible for redevelopment of Right-Of-Way Plan set which included recreating Required ROW, involving several property plot sheets for calculating areas of Take and Deed calculations. He recreated plan sheets to show affected areas of Required ROW, created ROW Coordinate Table using Inroads, produced color plots for client discussions while following client standards. He generated new ideas and solutions to meet and exceed the projects plan presentation.

Advanced Designer, S.R. 0095 Section BS2, PennDOT, Philadelphia, Pennsylvania. John was responsible for making frequent revisions to construction, drainage and cross section plans related to plan presentation. He developed the Right-Of-Way Plan set which included creating Required ROW involving several property plot sheets for calculating areas of Take and Deed calculations. He created plan sheets to show affected areas of Required ROW, created ROW Coordinate Table using Inroads, and produced color plots for client discussions while following client standards. He generated new ideas and solutions to meet and exceed the projects plan presentation.

Advanced Designer, S.R. 0080 Section 05S, PennDOT, East Stroudsburg, Pennsylvania. John was responsible for creating a Right-Of-Way Plan set which included creating Required ROW involving several property plot sheets for calculating areas of Take and Deed calculations. He created plan sheets to show affected areas of Required ROW, created ROW Coordinate Table using Inroads, produced color plots for client discussions while following client standards. He generated new ideas and solutions to meet and exceed the projects plan presentation.

Advanced Designer, S.R. 0318West Middlesex Viaduct and S.R. 0019 Iron Bridge, Mercer County, Pennsylvania. The proposed bridge design is the re-use of portions of the

Education

AAS – Specialized Technology, CAD Computer System Management, Pittsburgh Technical Institute, Pittsburgh, Pennsylvania, 2000

AAS – Specialized Technology, Computer Aided Graphing, Pittsburgh Technical Institute, Pittsburgh, Pennsylvania, 1986

Certifications

Pittsburgh Technical Institute (PTI) Advisory Board for Computer Aided Drafting, 2000

Honors/Awards

Bentley Inspired Award Finalist, 2009

Years of Experience

CDM Smith: 38
Total Years: 38

substructure from the existing bridge. The PennDOT District 1-0 project includes preliminary and final design for replacements for the West Middlesex viaduct that spans two railroads, a river, and a roadway; and the Iron Bridge that is a major economic link to I-80 and is adjacent to the landmark Iron Bridge Inn.

Advanced Designer, Milepost 242-245 Mainline Reconstruction, Pennsylvania Turnpike Commission, York County, Pennsylvania. This project is the final phase of the reconstruction of one mainline bridge, two overhead bridge structures, and the extension of two major culverts on the turnpike.

Advanced Designer, I-95 Section BSR, PennDOT, District 6-0, Philadelphia, Pennsylvania. The project was the roadway design for two miles of reconstruction and widening of S.R. 0095 as well as widening of the city street network to increase capacity and safety.

Advanced Designer, S.R. 62 Section B05 Roadway and Bridge Reconstruction, Sharon, Pennsylvania. This project for PennDOT District 1-0 was the final design for one 4-span steel beam bridge rehabilitation and two bridge replacements in a highly industrialized corridor of S.R. 62. The project included resurfacing, restoration, and rehabilitation.

Advanced Designer, S.R. 1001, Final Design for Various Deck Replacements, Maguire Group, Inc., Pennsylvania. The Barge Basin re-decking project included repairs to the substructures and bearings. For the deck replacement of a simple span 2-girder bridge, two traffic lanes remained open during construction.

Advanced Designer, Market Square Public Improvements, Urban Redevelopment Authority, Pittsburgh, Pennsylvania. The public improvements included demolition of existing Market Square, plaza and street grading and drainage, plaza construction, new street reconstruction, street and site lighting, landscaping, irrigation, vehicular/pedestrian traffic control, and coordinating service connections to existing electric, gas, water lines, and storm sewers. CDM Smith also provided technical support during construction.

Advanced Designer, Various Engineering and Environmental Services for Preliminary Bridge Design for S.R. 1024, S.R.1033, S.R. 1035, S.R. 3005, and S.R. 3013, Crawford and Mercer Counties, PennDOT District 1-0, Pennsylvania. This project included several multiple single span composite prestressed concrete spread box beam bridge on integral abutments.

Advanced Designer, St. Clair Hospital Medical Facility Roadway Design Services, Peters Township, Washington County, Pennsylvania. The project included construction plans, traffic signal design, traffic control plan, and Highway Occupancy Permit application.

Advanced Designer, Greensburg Pike Bridge, County of Allegheny, Pennsylvania. The project is the final design of the replacement of the Greensburg Pike Bridge over Turtle Creek. The existing structure is a through truss over 500 feet long and the new bridge will be a total replacement on a new alignment.

Appendix B: Sample Insurance Certificate

The following sample insurance certificate details the levels of coverage CDM Smith Inc. carries on a typical project.

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 12/27/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Aon Risk Services Northeast, Inc.
Boston MA Office
53 State Street
Suite 2201
Boston MA 02109 USA

CONTACT NAME:
PHONE (A/C. No. Ext): 866-283-7122 **FAX (A/C. No.):** 800-363-0105
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A:	Hartford Fire Insurance Co.	19682
INSURER B:	ACE Property & Casualty Insurance Co.	20699
INSURER C:	Underwriters At Lloyds London	15792
INSURER D:	Hartford Accident & Indemnity Company	22357
INSURER E:	Twin City Fire Insurance Company	29459
INSURER F:		

INSURED
CDM Smith Inc.
75 State Street Suite 701
Boston MA 02109 USA

COVERAGES **CERTIFICATE NUMBER:** 570110067935 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS,

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT X LOC OTHER:			08CSEQU4161	01/01/2025	01/01/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$2,000,000 $1,000,000 $15,000 $2,000,000 $4,000,000 $4,000,000
A	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			08 UEN QU4162	01/01/2025	01/01/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$2,000,000
B	X **UMBRELLA LIAB** X OCCUR **EXCESS LIAB** CLAIMS-MADE DED RETENTION			XEUG28194687009	01/01/2025	01/01/2026	EACH OCCURRENCE AGGREGATE	$10,000,000 $10,000,000
D	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y/N ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER **(Mandatory in NH)** N If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		08WNQU4160 AOS	01/01/2025	01/01/2026	X PER STATUTE OTH-ER	
E				08WBRQU4163 WI	01/01/2025	01/01/2026	E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT	$1,000,000 $1,000,000 $1,000,000
C	Architects & Engineers Professional			PSDEF2500033 Professional/Claims Made	01/01/2025	01/01/2026	Each Claim Aggregate	$5,000,000 $5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

For Proposal Purposes Only.

CERTIFICATE HOLDER

CDM Smith Inc.
75 State Street, Suite 701
Boston MA 02109 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services Northeast, Inc.

Holder Identifier :

Certificate No : 570110067935

AGENCY CUSTOMER ID: 10518329

LOC #:

ADDITIONAL REMARKS SCHEDULE

AGENCY	NAMED INSURED
Aon Risk Services Northeast, Inc.	CDM Smith Inc.
POLICY NUMBER	
See Certificate Number: 570110067935	
CARRIER / NAIC CODE	EFFECTIVE DATE:
See Certificate Number: 570110067935	

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: ACORD 25 **FORM TITLE:** Certificate of Liability Insurance

01.01.25 - 01.01.26 Professional

Policy: PSDEF2500033

Beazley (Syndicates 2623/0623) - 25%
BRIT (Syndicate 2987) - 25%
Arch Insurance (UK) Limited - 5%
Convex Insurance UK Limited - 7.5%
Lloyds Syndicates - 12.5% 4242 - 6.25%, 457 - .9375% - 1.5625%, 4711 - 1.25%, 1686 - 1.25%, 5555 - 1.25%
Lloyds Syndicate 1458 - 10%
Lloyds Syndicate 1618 - 15%

Appendix C: Required Forms

- Designated Contact, Certification and Signature Form
- Addendum Acknowledgement Form
- Abandoned Mine Lands (AML) Contractor Information Form
- State of West Virginia Centralized Expression of Interest

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

(Printed Name and Title) Glenn Nicholas Iosue, PE, BCEE; Client Service Leader

(Address) 500 Lee St. E. Suite 410, Charleston, WV 25301

(Phone Number) / (Fax Number) 215-375-6645

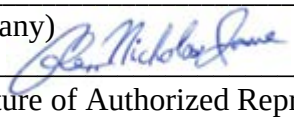
(email address) IosueGN@cdmsmith.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through *wv*OASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

CDM Smith Inc.

(Company)



(Signature of Authorized Representative)

Glenn Nicholas Iosue, PE, BCEE; Client Service Leader (August 20, 2025)

(Printed Name and Title of Authorized Representative) (Date)

215-375-6645

(Phone Number) (Fax Number)

IosueGN@cdmsmith.com

(Email Address)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CEOI 0313 DEP2600000001

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

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

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

☑ Addendum No. 1	☐ Addendum No. 6
☐ Addendum No. 2	☐ Addendum No. 7
☐ Addendum No. 3	☐ Addendum No. 8
☐ Addendum No. 4	☐ Addendum No. 9
☐ Addendum No. 5	☐ Addendum No. 10

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

CDM Smith Inc.
Company


Authorized Signature

August 20, 2025
Date

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

Office of Surface Mining Reclamation and Enforcement
Instructions for Completing the AML Contractor Form OMB #1029-0119

Purpose: The Office of Surface Mining Reclamation and Enforcement Applicant/Violator System (AVS) office is required to conduct eligibility checks for businesses performing abandoned mine land (AML) reclamation work to ensure those businesses are not associated with any coal mining violations in accordance with the Surface Mining Control and Reclamation Act (SMCRA). This form is used to update the AVS database which maintains relationship information between individuals and their associated businesses. If you have any questions, please contact the AVS Office at 800-643-9748.

Part A: General Information: Part A should be completed by the AML Contractor. You can find an electronic fillable form on our website (https://www.osmre.gov/programs/regulating-coal-mines/avs).

Part B: Obtain an Organizational Family Tree (OFT): Part B should be completed by the AML Contractor. An Organizational Family Tree (OFT) indicates the relationships between individuals and their associated business.

You can obtain an OFT two ways:

1. Call the AVS Office at 800-643-9748 to request your company's OFT.
2. Go to the AVS website (https://avss.osmre.gov). Click "Access AVS", and then "Login as Guest". Place your cursor on the "Entity" Module and click. Type your business name (or entity number) in search box and press enter. Select your company and then click on the "Relationship" tab to display your Entity OFT information. Print the Entity OFT from AVS. Review the OFT, if you need to make updates complete Part D. Attach the OFT to your AML Contractor Form.

If you are a new company or this is your first AML bid: Your business is most likely **not** in the AVS. If your company does not appear in the AVS database, move on to Part C, check Box 3, and complete Part D of this form.

If your company has worked on previous AML projects or in the coal mining industry: Your business is most likely in the AVS, but may need to be updated. Obtain and review your OFT and then complete Part C.

Part C: Certifying and updating information in the Applicant/Violator System (AVS). Part C should be completed by the AML Contractor. Please check the box that best describes your situation, sign and date.
Note: Signature date must be recent (within 30 days) to be considered.

Part D: OFT Information. Part D should be completed by the AML Contractor **only** if you want to make updates to what information is in the AVS, or if your company **does not** have any information in the AVS. Include **all** fields, including the relevant begin and/or end dates for individuals, including middle name or initial for individuals if possible.

Answers to Part D FAQs:

Which employees should be included in Part D?
Any current or separated employee of significance should be listed. Refer to the list provided at the top of Part D. For those owning less than 10% reporting the ownership is optional. Include those employees who direct, manage, or control the project. If, for example, a Professional Engineer has the power to determine how the project is conducted you should include him/her on Part D.

What address and phone number should I use?
Use the address and phone number where the person receives business correspondence.

What are the begin and end dates for?
Begin dates indicate when a person started in that position in your company. If an individual still works at the company you can simply fill in the begin date and leave the end date blank or write "N/A". **End dates** are used for indicating that someone no longer works in that capacity or is no longer employed at the company. **If an employee has held more than one position** or title, note the begin dates/end dates for each position.

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

ABANDONED MINE LANDS (AML) CONTRACTOR INFORMATION FORM

You must complete this form for your AML contracting officer to request an eligibility evaluation from the Office of Surface Mining Reclamation and Enforcement (OSMRE) to determine if you are eligible to receive an AML contract. This requirement 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:	CDM Smith Inc.
Tax ID #:	04-2473650
Address:	75 State Street, Suite 701
City, State, & Zip:	Boston, MA 02109
Phone Number:	215-375-6645
Email Address:	IosueGN@cdmsmith.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, _____, 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		Client Service Leader
Date	Signature	Title

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

Part D: OFT Information

Contractor's Business Name: CDM Smith Inc.

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

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

Name:	Timothy B. Wall
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Chairman of the Board/ CEO
Phone Number:	617-452-6000

Name:	Anthony B. Bouchard
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Board Member/President/COO
Phone Number:	617-452-6000

Name:	Thierry Desmaris
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Board Member .
Phone Number:	617-452-6000

Name:	Julia B. Forgas
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Board Member .
Phone Number:	617-452-6000

PAPERWORK REDUCTION STATEMENT

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

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

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

Part D: OFT Information

Contractor's Business Name: CDM Smith Inc.

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

Name:	Christopher R. Campbell
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Treasurer
Phone Number:	617-452-6000

Name:	Paul T. Milligan
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Secretary
Phone Number:	617-452-6000

Name:	Jennifer S. Banner
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Board Member
Phone Number:	617-452-6000

Name:	Randy Rogers
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Board Member
Phone Number:	617-452-6000

PAPERWORK REDUCTION STATEMENT

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

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

Part D: OFT Information

Contractor's Business Name: CDM Smith Inc.

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

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

Name:	Chris Karpathy
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Board Member
Phone Number:	617-452-6000

Name:	Gae Walters
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Board Member
Phone Number:	617-452-6000

Name:	Angela Zutavern
Address:	75 State Street, Suite 701
City, State, Zip:	Boston, MA 02109
Begin Date:	April 8, 2025
End Date:	April 7, 2026
% Ownership:	N/A
Position/Title:	Board Member
Phone Number:	617-452-6000

Name:	
Address:	
City, State, Zip:	
Begin Date:	
End Date:	
% Ownership:	
Position/Title:	
Phone Number:	

PAPERWORK REDUCTION STATEMENT

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

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U.S. Department of the Interior
Office of Surface Mining Reclamation and Enforcement
Applicant/Violator System

AVS_Visitor
Help Logout

Entities

Previous Search

Entity Name Search All iter

Entity Number: 265757
Last Name: CDM Smith Inc
*** First Name:**
Middle Name:
Alias:
Tax ID:
Memo: AML Contractor
Created: 8/18/2022
Updated: 8/18/2022
Source: benjamin.campbell
Entity Type: Business
Locked: Y

Entity #	Entity Name	Suffix	First	Middle	Lock	Type	
265757	CDM Smith Inc				Y	Business	Select

Addresses | Relationships | Applications | Permits | Comments

	Entity #	Parent Entity	Relationship	Entity #	Related Entity	First	% Own	Begin	End	Hold	Hold Source	Create	Update	Description
☐	265757	CDM Smith Inc	Owner	265758	Wall	Timothy	2.99	1/1/2018		None		8/18/2022	8/18/2022	

	265757	CDM Smith Inc	Chairman of the Board	265758	Wall	Timothy	0.00	1/1/2018		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Chief Executive Officer	265758	Wall	Timothy	0.00	1/1/2018		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Director	265758	Wall	Timothy	0.00	1/1/2018		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Owner	265759	Desmaris	Thierry	2.99	1/1/2012		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Chief Financial Officer	265759	Desmaris	Thierry	0.00	1/1/2012		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Executive Vice President	265759	Desmaris	Thierry	0.00	1/1/2012		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Director	265759	Desmaris	Thierry	0.00	1/1/2012		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Owner	265760	Bouchard	Anthony	2.99	1/1/2015		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	President	265760	Bouchard	Anthony	0.00	1/1/2015		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Chief Operations Officer	265760	Bouchard	Anthony	0.00	1/1/2015		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Director	265760	Bouchard	Anthony	0.00	1/1/2015		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Owner	265761	Forgas	Julia	2.99	1/1/2021		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Executive Vice President	265761	Forgas	Julia	0.00	1/1/2021		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Director	265761	Forgas	Julia	0.00	1/1/2021		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Corporate Officer	265761	Forgas	Julia	0.00	1/1/2021		None		8/18/2022	8/18/2022	Chief Marketing Offic
	265757	CDM Smith Inc	Owner	265762	Marcaccio	Mario	2.99	1/1/2018		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Senior Vice President	265762	Marcaccio	Mario	0.00	1/1/2018		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	General Counsel	265762	Marcaccio	Mario	0.00	1/1/2018		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Director	265762	Marcaccio	Mario	0.00	1/1/2018		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Owner	265763	Campbell	Christopher	2.99	1/1/2016		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Senior Vice President	265763	Campbell	Christopher	0.00	1/1/2016		None		8/18/2022	8/18/2022	
	265757	CDM Smith Inc	Treasurer	265763	Campbell	Christopher	0.00	1/1/2016		None		8/18/2022	8/18/2022	

☐	265757	CDM Smith Inc	Owner	265764	Milligan	Paul	2.99	1/1/2018		None		8/18/2022	8/18/2022	
☐	265757	CDM Smith Inc	Secretary	265764	Milligan	Paul	0.00	1/1/2018		None		8/18/2022	8/18/2022	
☐	265757	CDM Smith Inc	Senior Vice President	265764	Milligan	Paul	0.00	1/1/2018		None		8/18/2022	8/18/2022	
☐	265757	CDM Smith Inc	General Counsel	265764	Milligan	Paul	0.00	1/1/2018		None		8/18/2022	8/18/2022	Assistant
☐	265757	CDM Smith Inc	Owner	265765	Makofsky	Jason	2.99	1/1/2014		None		8/18/2022	8/18/2022	
☐	265757	CDM Smith Inc	Assistant Secretary	265765	Makofsky	Jason	0.00	1/1/2014		None		8/18/2022	8/18/2022	
☐	265757	CDM Smith Inc	Corporate Officer	265765	Makofsky	Jason	0.00	1/1/2014		None		8/18/2022	8/18/2022	Senior Legal Counse
☐	265757	CDM Smith Inc	Owner	265766	Walters	Gae	2.99	1/1/2003		None		8/18/2022	8/18/2022	
☐	265757	CDM Smith Inc	Director	265766	Walters	Gae	0.00	1/1/2003		None		8/18/2022	8/18/2022	Outside
☐	265757	CDM Smith Inc	Owner	265767	Stevenson	Howard	2.99	1/1/1991		None		8/18/2022	8/18/2022	
☐	265757	CDM Smith Inc	Director	265767	Stevenson	Howard	0.00	1/1/1991		None		8/18/2022	8/18/2022	Outside
☐	265757	CDM Smith Inc	Owner	265768	Banner	Jennifer	2.99	1/1/2018		None		8/18/2022	8/18/2022	

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

State of West Virginia
Centralized Expression of Interest

Proc Folder:	1717189
Doc Description:	AML - EOI Pre-Qualification for Consultants
Proc Type:	Central Purchase Order
Reason for Modification:	Addendum #1 issued to publish agency responses to vendor submitted questions.

Date Issued	Solicitation Closes	Solicitation No	Version
2025-08-13	2025-08-20 13:30	CEOI 0313 DEP2600000001	2

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code: 000000100771
Vendor Name : CDM Smith Inc.
Address : 75 State Street, Suite 701
Street :
City : Boston
State : MA **Country :** United States **Zip :** 02109
Principal Contact : Glenn Iosue, Client Service Leader
Vendor Contact Phone: 215-375-6645 **Extension:**

FOR INFORMATION CONTACT THE BUYER

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

Vendor Signature X  **FEIN#** 04-2473650 **DATE** August 20, 2025

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

ADDITIONAL INFORMATION

The Acquisitions and Contract Administration Section of the Purchasing Division is soliciting vendors to prequalify to provide proposals on Expression(s) of Interest(s) ("EOI") for the West Virginia Department of Environmental Protection, Division of Land Restoration, Office of Abandoned Mine Lands and Reclamation (WVDEP-DLR-AML) from qualified firms to provide architectural/ engineering services pursuant to HB 3429.

The purpose of the project is to solicit pre-qualifications for the purpose of making available a list of pre-qualified Consultants.

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

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

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description:
EOI Engineering Design Services

SCHEDULE OF EVENTS

Line	Event	Event Date

CDM Smith®