POTESTA Engineers and Environmental Consu..
7012 MacCorkle Avenue, SE, Charleston, WV 25304 - (304) 342-1400 -..

March 21, 2017

Department of Administration
Purchasing Division
2019 Washington Street, East
Charleston, West Virginia 25305-0130

RE: Solicitation No. 0603 ADJ1700000005
Expression of Interest
Sullivan Tract Master Plan Design Services Project
POTESTA Project No. 0101-17-0032

Dear Bid Clerk:

Potesta & Associates, Inc. (POTESTA) is submitting three copies of our Expression of Interest (EOI) for the above-referenced project. In accordance with EOI instructions, we have included a completed signature sheet and purchasing affidavit. We look forward to further sharing our qualifications and discussing and discussing our capabilities during an oral interview. Please feel free to contact me should you require anything else.

Sincerely,

POTESTA & ASSOCIATES, INC.

Dana L. Burns

Dana L. Burns, P.E., P.S.
Vice President

DLB:DMK/kjt

Enclosures

POTESTA
Engineers and Environmental Consultants

ZMM
ARCHITECTS & ENGINEERS

EXPRESSION OF INTEREST PREPARED FOR THE

West Virginia Army National Guard
Construction and Facilities Management Office

Architectural/Engineering and Other Professional Services for the Development of a Master Plan for the Sullivan Tract Property near Beaver, West Virginia

Solicitation No. 0603 ADJ1700000005

POTESTA Offices in:

CHARLESTON
7012 MacCorkle Avenue, SE
Charleston, WV 25304
(304) 342-1400

MORGANTOWN
125 Lakeview Drive
Morgantown, WV 26508
(304) 225-2245

WINCHESTER
15 South Braddock Street
Winchester, VA 22601
(540) 450-0180

ZMM Office in: 222 Lee Street West, Charleston, West Virginia 25302

POTESTA Project Number: 0101-17-0032

Expression of Interest

INTRODUCTION

Potesta & Associates, Inc. (POTESTA) along with our strategic partner ZMM Architects & Engineers (ZMM), will be pleased to provide architectural/engineering and other professional services for the development of a master plan for the Sullivan Tract property near Beaver, West Virginia.

We understand that the West Virginia Army National Guard Construction and Facilities Management Office (WVANG) will receive a donation of approximately 10 acres of land for development within the Sullivan Tract of property. The Sullivan Tract is a 230-acre tract of land currently utilized for livestock agriculture. The property is also characterized as a pre-1977 Surface Mining Control and Reclamation Act (SMCRA) surface mined area. The landowner is donating 10 acres of the Sullivan Tract for the development by the WVANG.

This project includes development of a master plan for this property to be transformed to a business/industrial park. The master plan will include multiple options for entrances, including existing state/county/local roads, proposed state/county/local roads and possibly a new interstate interchange. The master plan will also consider utility and road infrastructure for the property and building placement.

The project will include development of drawings and specifications for the construction of the chosen proposed entrance route(s) for bidding and awarding construction contract(s).

The project will include development of drawings and specifications for the construction of utility and road infrastructure. POTESTA will work with both public and/or private utility providers to prepare designs, obtain regulatory approvals, and develop bid documents for utilities to serve the development.

POTESTA along with our strategic partner, ZMM, will develop drawings and specifications for a 25,000 to 100,000 square foot building including required parking fields.

We understand the WVARNG expects POTESTA and ZMM to develop the design of this facility to include preliminary and final working drawings, specifications, detailed engineering construction cost estimates, bidding and construction schedules, surveying, evaluations of bids, and related services. This will also include review and approval of samples and/or shop drawings, processing and developing change orders with detailed cost estimates, evaluations of supplier's change order proposals and recommendations for negotiation, and preparation of record drawings showing the completed construction. We will preside over construction meetings and prepare construction progress and forecast reports. Contract administration services can be provided by POTESTA and ZMM, if required.

POTESTA with support from ZMM will develop a master plan including entrances for public roadways, access roads within the proposed business/industrial park, extension of utilities to serve the park, and a building pad for the WVARNG facility. POTESTA will develop alternative master plan/reports for WVARNG review and evaluation. Upon WVARNG's concurrence with the preferred plan, POTESTA and ZMM will begin final design for the facilities.

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CORPORATE PROFILE

Expression of Interest

POTESTA CORPORATE PROFILE

FIRM HISTORY

Potesta & Associates, Inc. (POTESTA) was founded in 1997 as a full service engineering and environmental consulting firm headquartered in Charleston, West Virginia. We have now expanded to a diverse staff of 91 experienced engineers, scientists, and support personnel with branch offices in Morgantown, West Virginia, and Winchester, Virginia. Our clients include mining, manufacturing and chemical companies; utility companies; waste management companies; colleges/universities; land developers; attorneys; financial institutions; insurance companies; local, state and federal agencies; construction companies and architects.

Required paperwork is in Appendix A.

SERVICES

- Aboveground Storage Tank
- Air
- Asbestos Abatement
- Biological and Toxicological
- Civil Engineering and Site Design
- Coal Supply and Procurement
- Computer-Aided Drafting and Design
- Construction Monitoring
- Environmental Emergency Response
- Environmental Site Assessment
- Geographic Information Systems
- Geotechnical Engineering
- Groundwater
- Hydrology and Hydraulics Design
- Landfills and Solid Waste
- Litigation Support Systems
- Marcellus Shale Natural Gas
- Mining
- Mixing Zone Analysis
- Oil and Natural Gas
- Permitting
- Remedial
- Roadway Engineering
- Sampling
- Stream Restoration
- Subsidence Evaluation
- Surveying/Mapping
- Underground Storage Tank
- Water and Wastewater
- Water Quality
- Wetlands

EXPERIENCED STAFF

POTESTA's staff is committed to delivering innovative, cost-effective solutions to meet our client's complex requirements. The firm's environmental department consists of biologists, geologists, chemists, environmental scientists and environmental engineers, many with advanced degrees (Masters and Ph.D. level). POTESTA's engineering department includes civil, geotechnical, environmental, mining and mechanical engineers. Our registered professional engineers have over 300 collective years experience among them and are supported by a capable team of engineers, designers and surveyors.

Our firm is managed by two principals driving POTESTA forward with their experience and emphasis on exceeding expectations. Ronald R. Potesta, President, is a former Director of the West Virginia Division of Natural Resources and Dana L. Burns, P.E., Vice President, has more than 35 years experience with civil, geotechnical, mining and environmental engineering projects.

FIRM HIGHLIGHTS:

Established in 1997

Corporate Office in Charleston, WV

Regional Offices in Morgantown, WV Winchester, VA

Primarily Serve Clients East of the Mississippi River

Carry a Full Line of Insurance Coverage

Stringent Internal Quality Control System

Firm Profile

ZMM
ARCHITECTS & ENGINEERS

LOCATION:
222 Lee Street, West
Charleston, WV

CONTACT:
Phone 304.342.0159
Fax 304.345.8144
www.zmm.com

History of ZMM

ZMM was founded in 1959 in Charleston, West Virginia by Ray Zando, Ken Martin, and Monty Milstead. Since the inception of the firm, ZMM has been dedicated to providing an integrated approach to building design for our clients. ZMM delivers this integrated approach by providing all building related design services, including architecture, engineering (civil, structural, mechanical, and electrical), interior design, and construction administration from our office in Charleston. Our integrated design approach makes ZMM unique among architectural firms in West Virginia, and helps to ensure the quality of our design solutions by providing more thoroughly coordinated construction documents.

Over the last decade, ZMM has become a leader in sustainable or 'green' design in West Virginia. In addition to participating in sustainable design and construction seminars throughout the State (Beckley, Fayette County, Morgantown, Charleston, and Parkersburg), ZMM designed one of the first sustainable educational facilities in West Virginia (Lincoln County High School). ZMM's unique design approach has proven invaluable on projects that employ sustainable design principles, which often require a more integrated approach to building design.

As ZMM enters our second half-century providing professional design services in West Virginia, we remain committed to the ideal of providing high quality, client focused, design solutions that meet budget and schedule requirements. This commitment to quality has been recognized through both State and National design awards, as well as through the long-term client relationships that we have developed.

ZMM
ARCHITECTS & ENGINEERS

ZMM has been dedicated to the integrated approach to building design which is unique to architectural firms of our size. Our past successful experience demonstrates that providing multi-disciplined services within one organization results in a fully coordinated project. ZMM has the qualified professionals available to provide services throughout the duration of a project from the initial planning phases through post-occupancy evaluations and beyond.

Advantages of an Integrated Design Approach:

- The Owner has a Single Point of Design Responsibility
- Improved Design Schedule
- Improved Coordination of Documents
- Improved Construction Phase Services
- Well Coordinated Documents Lead to Better Bids for the Owner

Additionally, ZMM is constantly working to improve the services we offer by addressing emerging and evolving trends that impact the design and construction market. ZMM has seven LEED accredited Professionals on staff to address the needs of our clients who are interested in designing buildings that meet the US Green Building Council's standards. This continues ZMM's active implementation of sustainable design principles on our projects.

Services

Pre-Design

Educational Facility Planning
Programming
Space Planning
Feasibility Studies
Existing Building Evaluation
Site Evaluation and Analysis
Master Planning
Construction Cost Estimating

Design

Architectural Design
Sustainable Design
Interior Design
Landscape Architecture
Structural Engineering
Mechanical Engineering
Electrical Engineering
Civil Engineering
Lighting Design
Energy Consumption Analysis

Post Design

Construction Administration
Value Engineering
Life Cycle Cost Analysis
Post-Occupancy Evaluation

QUALIFICATIONS

Expression of Interest

ROADWAY ENGINEERING

POTESTA has completed a number of transportation and roadway design studies, evaluations, and design projects. This work has been completed for both the WVDOH as well as a number of private developers and land owners. The following provides a summary of several representative projects.

Potential Industrial Park Development—Eastern Kanawha County, West Virginia
POTESTA was retained by Business & Industrial Development Corporation (BIDCO) to perform a design study associated with providing access, utilities, and development of an approximately 700-acre mixed-use industrial park located in eastern Kanawha County, West Virginia near the community of Shrewsbury. POTESTA evaluated three possible access routes to the property including determination of possible roadway grades, alignment, drainage structures, and associated cost of development. Phase 2 of the project included evaluating requirements and associated costs with extending utilities (water, sewer, gas, and telephone) to the site. Phase 3 considered different earthwork/grading plans for development of the site into usable parcels. Roadway lengths associated with the project ranged from 1.6 miles to over 2.5 miles.

National Industrial Wholesale Lumber Access Road and Site Design—Amma, West Virginia
POTESTA was selected by the Roane County Economic Development Authority to prepare contract plans for an industrial access road in Roane County, West Virginia. The project included a 0.41-mile two–lane industrial access road from County Route 29 adjacent to the Amma exit of I-79 to access a new building products distribution warehouse. POTESTA provided surveying and prepared roadway design and right-of-way plans for the project. In addition to the access road design, POTESTA prepared a site development plan for National Industrial Lumber. The project included a site grading plan and a storm water management plan. POTESTA performed nuclear density testing, boundary surveys, and construction observation in support of the project.

North Bridgeport Bypass—Bridgeport, West Virginia
POTESTA was selected by the West Virginia Division of Highways (WVDOH) to perform an environmental assessment, design report, and prepare final contract plans and related documents for the North Bridgeport Bypass project in Harrison County, West Virginia. POTESTA prepared the environmental assessment report and assisted Benatec Associates, Inc. (our subconsultant) with the design study. POTESTA completed right-of-way plans and a portion of the roadway design for the project. Extensive revisions to the original design were made by POTESTA as a result of landowner plans for future development adjacent to the roadway.

ROADWAY ENGINEERING (cont.)

County Route 31 Upgrade

POTESTA was contracted by Wolf Run Mining Company (Wolf Run) to provide design services, right-of-way, construction drawings, and specifications for the approximate 3.6-mile County Route 31 Jarvisville Road upgrade in Harrison County. This work was being facilitated by Wolf Run, which needed to upgrade the county route from a 60,000-pound load rating and an existing road width of 18 feet to ultimately carry the CRTS loads (126,600 pounds) and to have two 11-foot lanes with 4-foot shoulders. The work was performed to the level of detail required to receive West Virginia Division of Highways' approval of the plans. POTESTA completed the project in a three-month period, during which the project was surveyed and designed and submitted to the West Virginia Division of Highways for review and approval.

Kanawha Turnpike Widening Project

POTESTA was selected by the Division of Highways, District 1 to prepare contract plans for the Kanawha Turnpike widening project in South Charleston, Kanawha County, West Virginia. The project length was 0.32 miles and included pavement widening to upgrade the one-way only segment of road to two-way traffic. Two intersections were upgraded to accommodate two-way traffic movements. POTESTA completed surveying to produce mapping and prepared contract plans. POTESTA's average evaluation for the services performed was 4.6 out of a total possible 5.

McDowell County Schools

POTESTA worked under contract to ZMM, Inc. to perform site design for two proposed school facilities in Bradshaw, West Virginia, which required the relocation of approximately half a mile of West Virginia Route 80. POTESTA prepared right-of-way plans that included cemetery relocation, and also prepared contract plans for grading, drainage and pavement work. Geotechnical analyses were performed by POTESTA to design cut slopes for the roadway and to provide foundation recommendations for the proposed structures. WVDOH reviewed and approved POTESTA's design approach and contract plans. Excavation was over 1 million yards for this project.

MacCorkle Avenue/New University of Charleston Access Drive

POTESTA was retained by the University of Charleston to complete engineering and prepare contract documents for a new access drive from MacCorkle Avenue. POTESTA worked with WVDOH District 1 to prepare plans for the construction of a new access drive and intersection and closure of the existing main entrance drive from MacCorkle Avenue. Included was surveying to develop base mapping, coordination with existing utilities, and preparation of contract plans. The project includes a new intersection, left turn lane, deceleration lane, revision of the existing median, drainage improvements, sidewalk reconstruction, and closure of the former access road.

ROADWAY ENGINEERING (cont.)

Mineral Wells Industrial Park Access Road Extension
POTESTA was retained by the Parkersburg-Wood County Area Development Corporation to prepare contract plans including right-of-way plans for a 0.63 mile extension of Route 14/25 through the Mineral Wells Industrial Park in Wood County. This project included construction of a two-lane road to access potential development sites. The project included a 120-inch diameter culvert crossing of Jackson Run. Again, this work was coordinated with and reviewed by WVDOH.

Engineering of Phase 2, Southridge Centre
POTESTA was retained by Business & Industrial Development Corporation (BIDCO) to perform engineering associated with the Phase 2 area of Southridge Centre located just south of Charleston, West Virginia along US Route 119. Initial earthwork activities had been previously completed for a portion of the area. POTESTA prepared new roadway design plans which included areas of revised roadway geometry and the stormwater drainage system. POTESTA prepared three bid drawing packages for the project: (1) correction of landslide areas and establishment of proper roadside drainage systems, (2) construction of pavement, and (3) extension of utilities (water, sewer, electric, telephone, and gas) to serve the area. The roadway length is just over 0.5 mile.

Redesign of the Route 55 and Route 259 Intersection at Baker, WV
POTESTA reviewed the design study prepared by the WVDOH for the redesign of the Routes 55 and 259 T-intersection at Baker, West Virginia. The purpose of the redesign of the intersection was to make Route 259 the primary (through) traffic movement at the intersection as with the opening of Corridor H this is now the primary traffic movement instead of Route 55. POTESTA's review of the selected option resulted in:

- Keeping the entire alignment nearly level in elevation and thus eliminating a downgrade in a curve coming into bridge.
- Reducing the amount of land to be acquired by roughly one-half.

Baker Business Park District Industrial Access Road
POTESTA was contracted by the Hardy County Rural Development Authority to design a 1650-foot long industrial access road off of Corridor H just west of the Corridor H - Baker interchange. POTESTA performed surveying and prepared the design plans and right-of-way plans for this project.

Expression of Interest

CIVIL ENGINEERING

Civil engineering is an area of particular expertise and experience at POTESTA. Our engineering staff has a broad background related to the vast field of civil engineering. Civil engineering disciplines such as roadway design, railroad design, development of grading plans, stormwater management, water/wastewater treatment, and utility/infrastructure design are all areas of particular expertise at POTESTA. Our diverse staff of engineers, geologists, and scientists is routinely involved in these types of projects and work to support the project teams assigned to these projects on a daily basis to achieve a completed project that meets the client's expectations.

Once a project has been determined feasible through the preliminary planning stages, POTESTA's design professionals work to complete preliminary and final design plans. Frequent communication is made with the client and other design professionals to review the completed activities and obtain input for the design process.

The following design services are routinely completed for clients at POTESTA:

- Access Roadway Design and Layout
- Earthwork Optimization
- Site Development Grading and Drainage Plans
- Stormwater Management Plans
- Erosion and Sediment Control Plans
- Hydraulic Structure Design
- Earth Retaining Structures

POTESTA's engineering staff also routinely works with our clients to develop and prepare environmental permits that are typically required for the projects. These services include:

- Environmental Site Assessments
- Environmental Impact Statements
- Stormwater Management Permits
- Air Quality Permits
- Wetland Delineation and Mitigation Permits
- National Pollutant Discharge Elimination System (NPDES) Permits
- Groundwater Protection Plans
- Spill Prevention, Control and Countermeasure

During the construction process, POTESTA routinely provides professional services throughout the construction of our client's projects. These services often include survey layout, construction management, construction monitoring, record drawings preparation, and bid evaluation assistance.

Water and Wastewater Engineering

Our professional staff is dedicated to providing quality engineering services for various types of water treatment and distribution systems, as well as wastewater management, collection and treatment systems. Water and wastewater design services include:

- Feasibility Studies
- Conceptual Design/Final Design
- Bidding and Construction
- Construction Monitoring
- Wastewater Audits
- Wastewater Minimization Studies
- Engineer's Cost Estimates
- Remediation Systems
- Storage Tank Design
- Flow Measurement
- Small Flows Design (Traditional and Innovative Treatment Systems for Low Volume Flows)
- Sewage Collection and Treatment
- Water Treatment and Distribution
- Industrial Wastewater Treatment
- Wastewater Treatment Plant Design
- Water Treatment Plant Design
- Water and Sewer Line Extensions
- Landfill Leachate Treatment
- Combined Sewer Overflow

CIVIL ENGINEERING (cont.)

Hydrology and Hydraulic Engineering

Our engineers have extensive experience in the application of hydrology and hydraulic principles to the design of real world systems. These applications include:

- Drainage structure sizing—stream relocations; culverts; and channels
- Pond and dam design—sediment ponds and basins; spillway design/rehabilitation; detention/retention ponds; lagoons; and dams
- Detention and detention systems—ponds; pipes; and underground stormwater detention structures
- Floodplain management permits/approvals
- Floodway studies—FEMA (Federal Emergency Management Agency); NFIP (National Flood Insurance Program); flood elevation surveys/certifications; and flood routing
- Dam break analysis
- Hydrology surveys
- Stream gauging
- Rainfall and flow data collection
- Stormwater drainage system design
- Pressure pipe systems
- Stream restoration plans
- Natural stream channel design/restoration

To complete these types of applications, our engineers, scientists, and surveyors work jointly to develop an effective and economical solution to your problem. Their analyses use widely accepted computer models. POTESTA typically uses the following computer modeling programs:

- HEC-RAS
- HEC-HMS
  TR-20/TR-55
- StormCAD
- Culvert Master
- Flow Master
- Pond-Pac
- CORMIX

We have provided these services to a wide variety of public and private sector clients. Our staff not only understands the technical details, but is very experienced in working with the various state, federal, and local regulatory agencies. We know the level of detail they require and can obtain the necessary approvals in a timely manner.

CIVIL ENGINEERING (cont.)

Surveying

POTESTA proposes to utilize our own survey crews for work on this project. POTESTA will perform all of the surveying required for this project using in-house personnel. POTESTA has four licensed professional surveyors with approximately 50 years of combined surveying experience. Our surveyors are experienced in all aspects of surveying such as topographic mapping, boundary and property surveys, and construction surveys for layout of work, record drawings, and quantity measurements. Our surveyors have worked on numerous site development, roadway and bridge construction, utility construction, and landfill development projects.

POTESTA is equipped with modern surveying instruments allowing efficient data processing and accurate gathering of field information. Total station instruments equipped with data collectors are utilized for complete field to office automation allowing for high levels of productivity in the field. The latest versions of software are then used to process survey data and create drawings or required end products.

Small topographic mapping projects can be completed in-house using the aforementioned process. Larger projects are better suited for mapping using aerial photography. If necessary, POTESTA will provide the necessary surveying required for establishing ground control for aerial mapping in conjunction with our aerial mapping subcontractor. As a quality control measure, aerial mapping is field checked for accuracy by surveying cross sections or random points.

Surveys and mapping are completed to the standards as outlined by the National Map Standards as well as other applicable quality standards.

CADD

The CADD department utilizes the latest drafting/design software and computer hardware to maintain productivity at the high levels that clients demand and expect. We utilize Autodesk 2014 Civil 3D design software to prepare, revise, and manipulate drawings and engineering data efficiently. Drawings and figures are produced using a Hewlett Packard 4500 color ink jet plotter. POTESTA's experienced and trained professionals allow clients' projects and assignments to be completed rapidly and at a reasonable cost. Our CADD services include:

- Surveying data manipulation including development of topographic mapping; cross sections; profiles; isopach drawings; etc.
- Site design including grading plans; drainage plans; utilities plans; right-of-way plans, etc.
- Roadway design
- Water; sanitary; sewer; electric; natural gas; and telecommunications design
- Permit drawings; maps; and exhibits
- Earthwork and planimetric quantity development
- Two and three dimensional graphics

CIVIL ENGINEERING (cont.)

Construction Monitoring

POTESTA routinely provides construction monitoring services as part of our engineering work. Our projects have included site development, excavation and fill, utility installation, foundation testing, landfill construction and capping work, and access road construction.

POTESTA routinely provides soils testing in support of earthwork construction projects. Moisture-density relationship testing, field density testing, and proving ring tests to confirm soil bearing pressure are conducted for access road, parking area and building foundation projects.

Our staff has extensive experience in monitoring underground utility installation including water, sanitary sewer, and storm sewer systems. POTESTA has monitored trenching, cased road crossings, air pressure testing, and lamp testing.

POTESTA is experienced with quality assurance and quality control monitoring associated with earthwork and road/bridge construction projects.

GEOTECHNICAL ENGINEERING

POTESTA's engineers and geologists have extensive experience related to the geotechnical engineering disciplines. These include subsurface explorations, foundation design recommendations, slope stability analysis, and retaining wall design. POTESTA's geotechnical engineering group is experienced in many different facets of subsurface explorations. Typically, we work with the client to understand the nature of the project followed by a site reconnaissance survey to determine the location and number of test pits or subsurface borings required for the project. Specific attention is paid to site access, environmental issues, and rock outcrops. Additional information gathered in the field may include signs of soft ground or unstable slopes, as well as access to a water source if rock coring is required. POTESTA field engineers and geologists are familiar with the latest technologies to assist in the collection and analysis of soil and rock samples. Our knowledge of the proper procedures and familiarity with local conditions allow office and field personnel to adjust the investigation if any unanticipated field conditions are encountered.

POTESTA's engineers are very familiar with the subsurface conditions throughout the Mid-Atlantic region. POTESTA and its staff have been involved with hundreds of geotechnical projects. Many of these have included a subsurface evaluation, laboratory testing, stability analysis, design of remedial measures, foundation analysis and design, and general site construction consideration.

GEOTECHNICAL ENGINEERING (cont.)

Stability Analysis

Slope stability is often a major concern during the design and construction phases of many projects. POTESTA engineers are familiar with the various methods utilized to predict slope instability and are capable of completing the related analyses. POTESTA utilizes a number of stability computer models such as REAME and PC Stabl to determine the type and location of potential soil slope failures. Slope stability is critical on a number of projects including analysis of existing soil slopes, rock fills, dam analysis and design, estimating the causation of slope failure, and designing remedial measures. For many projects, POTESTA has been asked to develop preventive measures for a slope during the initial project design or recommendations to repair slope failures. Based upon the project circumstances, our engineers will consider various remedial measures, such as re-grading the site to obtain more suitable conditions, management of groundwater, and design of earth retention structures, including gabion baskets, soldier beam and lagging walls, sheet piles, reinforced concrete and reinforced earth slopes.

Foundation Recommendations

Foundation design is also an area of geotechnical experience that POTESTA routinely provides services to our clients. We often provide recommendations for the appropriate type of foundation system given the anticipated application and site conditions. The different types of foundations with which our staff is familiar are spread and strip footings, steel piles, auger-cast concrete piles, drilled piers, and reinforced mats. Preliminary foundation design recommendations and cost analyses are commonly performed during the initial phases of a project to assist in determining the project feasibility. After the project planning progresses, the preliminary alternative will be revised into a final recommendation which can then be incorporated into the project construction design documents.

Retaining Walls

Earth retention structures such as soldier beam and lagging walls, cast-in-place concrete gravity walls or sheet piling walls are also areas of strength for POTESTA's geotechnical engineering staff. POTESTA has designed a large number of retaining walls for both failed soil slopes as well as slopes requiring retention due to planned excavations associated with site development and roadway construction projects.

POTESTA has also designed several small gravity retaining walls for light commercial and residential applications. These have included concrete gravity walls and multi-segmented wall constructed from pre-cast block units which are commercially available. Many of the POTESTA highway and bridge related projects have also required the design of earth retention systems and retaining walls associated with bridge abutments. POTESTA has completed a number of these projects throughout the state of West Virginia for the West Virginia Division of Highways (WVDOH). These projects have included the completion of a subsurface exploration as per the WVDOH standards and the development of design recommendations meeting transportation design standards.

Expression of Interest

ENVIRONMENTAL CONSULTING

POTESTA has a large professional staff which includes environmental, mechanical and civil engineers and scientists who provide a variety of environmental services to our cliental. POTESTA staff typically work with both private and public sector clients on a diverse variety of projects related to the environmental engineering disciplines. POTESTA's experience related to remedial services includes the investigation and remediation of underground storage tanks using both in-situ and ex-situ bioremediation, soil vapor extraction, air sparging, pump-and-treat and other innovative cost-effective technologies. POTESTA staff personnel are current with both the state and federal regulatory requirements for remedial investigation and activities and readily work the United States Environmental Protection Agency as well as the State environmental agencies for the Mid-Atlantic states, such as the Virginia and West Virginia Departments of Environmental Protection.

POTESTA's staff has completed projects involving remediation of media impacted with heavy metals such as lead and mercury, and polychlorinated biphenyls (PCBs). Remedial activities range from excavation and off-site disposal to in-situ fixation and stabilization with capping of the treated areas. Several technologies may be used to effectively remediate a specific site. POTESTA works to identify, design, install and operate safe, cost-effective treatment technologies. Data accumulated during site characterization activities are used to evaluate and select the most appropriate technologies based upon soil types, contamination type and concentrations, as well as the regulatory requirements for a given area.

The effective abatement of asbestos containing materials is also an area of experience for POTESTA. Our licensed asbestos inspectors evaluate and sample suspected asbestos-containing materials. Working with appropriate contractors, our licensed asbestos project designer will develop abatement and/or management plans. We also routinely provide construction oversight during the abatement and removal process.

Air, water, and waste permitting are also areas of environmental engineering with which POTESTA has a broad background. We have a fully-qualified and experienced staff that works with owners, developers and commercial/ industrial clients to identify air pollution sources, obtain source permits and provide regulatory liaison services. We often work to develop control strategies to minimize fugitive dust emissions, as well as conduct compliance audits and visible emission testing of existing facilities. Our environmental staff also works routinely with our clients to permit and sample stormwater outfall from production facilities and treatment plants. Many of our developer and contractor clients contract with us to prepare construction stormwater permits for development sites which are three acres or larger.

ENVIRONMENTAL CONSULTING (cont.)

Phase I and II Environmental Assessments

POTESTA has performed Phase I ESAs and property evaluations for a number of clients at sites used as power plants, coal mining facilities, farmlands, public lands, and residential, commercial, and industrial properties. POTESTA performs Phase I ESAs in general accordance with American Society for Testing and Materials (ASTM) Standard E-1527, "Standard Practice for Environmental Site Assessments: Phase I Site Assessment Process" and ASTM Standard E-1528, "Standard Practice for Environmental Site Assessments: Transaction Screen Process."

When sampling of soil, groundwater, or air is required to evaluate a site, POTESTA conducts Phase II ESAs to characterize the site geology, hydrogeology, and the extent, nature, and degree of constituents of potential concern (COPCs) in the site media (i.e., soil, air, water). POTESTA is experienced with assessment of sites having single and multiple COPCs including petroleum hydrocarbons, chlorinated organics, BTEX and other volatile organic compounds, semi-volatile organic compounds, metals (including mercury), explosives, and polychlorinated biphenyls (PCBs).

Site Characterization/Assessment and Remediation

POTESTA is particularly experienced with and has a thorough understanding of Phase I and II environmental site assessments (ESAs), due diligence investigations for potential acquisitions, soil and groundwater remediation, underground storage tank (UST) removal and investigations, site remediation designs and oversight, and human health and ecological risk assessments. POTESTA has performed these environmental services for natural gas and electric utility companies, chemical companies, manufacturers, waste management companies, attorneys, architects, financial institutions, insurance companies, and local, state, and federal agencies. POTESTA has seven Licensed Remediation Specialists (LRSs) certified by the West Virginia Department of Environmental Protection to evaluate voluntary remediation and Brownfield projects in West Virginia using risk assessment concepts.

POTESTA has performed ESAs at sites having various levels of complexity employing numerous techniques including:

- Geoprobe® Direct Push Sampling
- Sonic Drilling
- Rotary Auger Drilling
- Rotary Air Drilling
- Directional/Horizontal Drilling
- Hand Augering

ENVIRONMENTAL CONSULTING (cont.)

- Soil Boring Sampling
- Rock Core Sampling
- Field Screening for Constituents of Concern
- Monitoring Well Sampling
- Geophysical Surveys
- Surface and Groundwater Sampling
- Sediment Sampling
- Wipe Sampling Aquifer Testing (Slug and/or Pump Tests)
- Geotechnical Analysis of Samples
- Groundwater Modeling

POTESTA's staff has assessed sites having single and multiple constituents of concern including petroleum hydrocarbons, chlorinated organics, BTEX and other volatile organic compounds, semi-volatile organic compounds, metals (including mercury), explosives, dioxin, and polychlorinated biphenyls (PCBs).

POTESTA has developed and implemented corrective action plans that include conventional and innovative technologies such as:

- Capping of Waste Contaminant or Contaminated Areas
- Excavation and Off-site Disposal in Approved Facilities
- Landfilling
- Chemical Fixation (In-situ and Ex-situ)
- Physical Separation
- Soil Washing
- Solvent Extraction
- Air Sparging
- Soil Vapor Extraction
- Aggressive Fluid Vapor Recovery
- Bioremediation (Landfarming, Enhanced Biopiles, Bioventing, Etc.)
- Thermal Desorption
- Incineration
- Monitored Natural Attenuation

ENVIRONMENTAL CONSULTING (cont.)

Our staff is experienced with the remediation feasibility and remedy selection process. POTESTA performs a Focused Remediation Feasibility Evaluation to identify, screen, and evaluate candidate remedies for a site. During the remedy evaluation process, POTESTA develops remedial action objectives, identifies applicable or relevant and appropriate requirements, applies risk-based corrective action methods, identifies remedial alternatives, evaluates remedial alternatives, and selects appropriate alternatives with input from our client. POTESTA uses risk-based corrective action (RBCA) evaluation methods that are acceptable to state agencies. RBCA cleanup decisions are based on current and future land use, elimination of toxicity, elimination of exposure pathways, engineering controls, and institutional controls (i.e., land use covenants) to reduce the risk to potential receptors (i.e., human and ecological).

FUNDING

Funding public projects in West Virginia can sometimes be complex and grueling, especially for entities unfamiliar with the process. POTESTA's staff is highly experienced with federal, state and local funding programs and their requirements. We have worked and assisted clients in the funding of water supply, sewer, highway, and economic development projects, including industrial parks. Our staff is particularly experienced in projects funded by United States Department of Housing and Urban Development (HUD, i.e., Small Cities Block Grants), United States Department of Agriculture, Rural Utility Services (RUS), United States Office of Surface Mining (OSM), administered by the West Virginia Department of Environmental Protection Abandoned Mine Lands (AML), congressional offices, United States Army Corps of Engineers (USACE), West Virginia Infrastructure and Jobs Development Council (WVIJDC), WV Department of Environmental Protection's Clean Water Treatment Revolving Fund, WV Bureau for Public Health's Drinking Water Treatment Revolving Fund, West Virginia Development Office, and United States Department of Commerce - Economic Development Administration. Potesta staff has also been trained and has received the IJDC Engineering and Administration Certification.

POTESTA has a unique and important experience with funding in West Virginia. Mr. Patrick Taylor managed the West Virginia Drinking Water Treatment Revolving Loan fund during his seven years with the West Virginia Bureau for Public Health (WVBPH). He has a history with state and federal funding agencies and their associated staff. He was a representative member of the IJDC, sitting on the Council's Sewer Technical Review Committee and overseeing the Water Technical Committee, as well as the Council's Funding and Consolidation Committees. He has worked closely with the Clean Water State Revolving Fund (CWSRF) Program and the IJDC and knows that due to the pressure exerted by the U.S. Congress on the U.S. EPA and their associated Capitalization Grant funded programs (WVDEP's Clean Water Treatment Revolving Fund and WVBPH's Drinking Water Treatment Revolving Fund), the WVDEP and WVBPH are under pressure to use their funds in a timely manner.

Other POTESTA staff including project managers Mark Sankoff, P.E. and Terry Moran, P.E. work with staff from various local, state, and federal funding and funding assistance agencies, including economic development authorities and regional planning and development councils, on a daily basis in order to get their projects planned, funded, design, permitted, and constructed. The work relations developed over the years with POTESTA staff and the public funding staff are critical to bring the projects to fruition.

PROJECT ABSTRACTS

LAND USE STUDY AND PLAN FOR 167-ACRE UNDEVELOPED AREA

West Virginia Regional Technology Park Corporation
South Charleston, West Virginia

Potesta & Associates, Inc. (POTESTA) was retained by the West Virginia Regional Technology Park (WVRTP) Corporation to assist them with a land use study and land use plan for a largely undeveloped 167-acre portion of their property. POTESTA met with representatives of the West Virginia Higher Education Policy Commission (WVHEPC) to obtain information relevant to land use planning at the WVRTP. WVHEPC provided POTESTA with topographic mapping showing road right-of-ways, utilities, topographic features, and other miscellaneous features. This information was utilized during POTESTA's evaluation of the property and land use plan development.

POTESTA participated in stakeholder meetings conducted by Perkins + Will, planners working for WVRTP, to develop long-term planning for the WVRTP. Information discussed during the stakeholder meetings was considered by POTESTA during development of the land use plan for the 167-acre portion of the WVRTP. POTESTA also met with the West Virginia Division of Highways (WVDOH) to discuss their plans for upgrading Jefferson Road running along the western side of the WVRTP property.

POTESTA considered a phased approach for the land use plan and development of the site. The concept for land development prepared by POTESTA included three phases. Land use plan schematics were developed for each phase showing access roads, developable areas, green space, and other features. POTESTA generated relative costs associated with the development of Phases 1, 2, and 3 including earthwork roadways, and utility mains. POTESTA prepared a report summarizing the planning process, proposed development, and preliminary costs. Findings were presented at a meeting of the WVRTP Board.

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COALFIELDS INDUSTRIAL SITE SURVEY

HNTB Corporation/West Virginia Development Office
Boone, Lincoln, Logan, Mingo, McDowell and Wyoming Counties, West Virginia

Potesta & Associates, Inc. (POTESTA), working as a subconsultant, recently performed work related to industrial development on many properties throughout the southern coalfields area of West Virginia. This work was performed for the West Virginia Development Office (WVDO) for a Coalfields Industrial Site Survey. This project was performed during 2001/2002 and included identifying and evaluating previous and current coal mining properties for possible development as industrial sites. The counties included in the survey were Boone, Lincoln, Logan, Mingo, McDowell and Wyoming. POTESTA's services on the project included:

- Attended steering committee meetings at the WVDO, including WVDO staff, county economic development officials, West Virginia Department of Environmental Protection (WVDEP) officials, mining industrial officials, land company officials, and Mr. Paul Hardesty of the West Virginia Coalfields Community Development Office.
- Worked with county officials to identify potential sites for inclusion in the survey.
- Completed research to locate existing utilities in each county, including the location, types, size and capacity of water, sewer, electric and telecommunications.
- Reviewed database information available from the WVDEP to develop an inventory of mining properties in each county.
- Developed preliminary screening criteria and evaluated over 1,000 mining sites. The preliminary screening resulted in 114 sites selected for further study.
- Prepared mapping of study sites in both ArcView and AutoCAD formats for exhibits.
- Developed final evaluation criteria used to evaluate 114 sites to determine those sites most feasible for industrial development.
- Obtained information regarding each site, including site size; configuration; terrain; proximity to highways, railroads and water; proximity to water, sewer and other utilities; mining status; current and proposed post-mining land use and contours; and property owner.
- Developed a database for the study sites, including permit area acreage, ownership, estimate of flat usable acreage, SMA number, location, mining status, etc.
- Evaluated 114 sites and ranked each site to determine the best sites in each of the six counties. POTESTA and WVDO identified 13 final sites to be studied in detail in Phase 2 of the project.
- Prepared a final report, including evaluation criteria, evaluation scores and final maps.

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BAKER BUSINESS PARK
INDUSTRIAL ACCESS ROAD

Hardy County Rural Development Authority
Baker, West Virginia

Potesta & Associates, Inc. (POTESTA) was retained by the Hardy County Rural Development Authority to provide engineering services for the study, design, and preparation of construction contract plans, related documents, and construction oversight services for the planned industrial access road for the Baker Business Park District (BBPD). The purpose of this project was to permit, design, and construct an industrial access road from Corridor H to the BBPD and the addition of deceleration lanes on the Corridor. POTESTA completed the following scope of services to prepare construction contract plans and related documents for the industrial access road in accordance with West Virginia Division of Highways'(WVDOH) requirements:

- **Surveying/Mapping** – Performed a field survey in the vicinity of the proposed industrial access road to generate accurate mapping along Corridor H, and to verify the accuracy of existing mapping.
- **Right-of-Way Plans** – Development of right-of-way information and the preparation of RW-4 plans including property descriptions.
- **Roadway Design and Preparation of Contract Plans** – Prepared contract plans for the proposed industrial access road into the BBPD.
    - Conceptual layout, drainage analysis, geometric design and layout of proposed roadways, intersection layout and details, temporary maintenance of traffic plans, Erosion and Sediment Control Plans, and signage and pavement marking plans.
- **Meetings** – Attended meetings as the Owner Representative including preliminary meetings with the WVDOH, on-site construction startup meeting, progress meetings, and miscellaneous telephone conversations and meetings.
- **Roadway Surveying** – Surveying to assist in the design necessary to complete construction of the industrial access road.
- **Construction Observation** – Performed construction observation during the construction of the industrial access road.
    - Full-time field technician on site, design team member provided periodic site visits, daily construction logs, detailed site review and punch list for the contractor, and a summary report describing the work that included the various daily reports, compaction test data and product literature.

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LIME KILN, AGGREGATE PLANT AND RAIL EXPANSION PROJECT

Carmeuse Lime & Stone
Winchester, Virginia

Potesta & Associates, Inc. (POTESTA) was retained by Carmeuse Lime & Stone to provide consulting engineering and environmental services for the expansion of their current quarry operations at their Winchester Quarry in Winchester, Virginia. The expansion includes the addition of two new vertical lime kilns and associated equipment, increasing their current aggregate crushing operation, and expanding their rail system to allow for increased shipping of product. The products include limestone aggregate, lime, and milled limestone. POTESTA, working with our railroad engineering consultant, designed the rail expansion to include grading, stormwater management, and an access road crossing for a rail loop with two side-by-side tracks encircling the lime kilns and aggregate crushing areas with rail spurs for loading and unloading of product to connect to two mainline rail carriers (Winchester and Western to the north and the CSX to the south). The total project track length consists of approximately 29,000 linear feet of rail. The design of the rail expansion also includes all trackside ditches, culverts, stormwater management systems, gas line relocations and crossings, rail crossings, and internal plant roadways, as well as grading for the expanded aggregate plant and lime kilns. Additional designs included civil/site services for a new office building and design of the sanitary water treatment system for this building. POTESTA acquired the necessary approvals to construct this project, such as approvals from local planning and zoning, inspections, health departments, and state governments such as Virginia Department of Transportation, Department of Environmental Quality (DEQ) and Department of Mining and Mineral Extraction (DMME). It was also determined that the grading for this rail project would impact wetlands; therefore, POTESTA conducted wetland delineations, developed reports, and completed applications to the Norfolk District (Northern Virginia field office) of the United States Army Corps of Engineers (USACE).

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Project Abstract

TUCKER COUNTY INDUSTRIAL PARK
Tucker County Development Authority

Davis, West Virginia

Potesta & Associates, Inc. (POTESTA) was retained to prepare construction documents for all the infrastructure improvements for Tucker County's new 162-acre industrial park along WV Rt. 93 near Davis, West Virginia. The site will provide almost 80 acres of developable land for new business interests in Tucker County.

The site includes significant wetlands within the developable acreage, requiring POTESTA to develop both utility extensions (water and sewer) and access road design that avoided most of the wetlands, yet serviced the entire park. The water and sewer lines for the park tie into the City of Davis's existing system. Over 8,000 linear feet of 8" water line and 6,500 linear feet of 3" force main sewer line were extended from Davis.

A 75-gallon per minute lift station was designed within the park at the lowest possible elevation and located to allow gravity sewer to follow the new access road, providing nearby sewer service to the most developable land.

The construction cost for this project was $1.1 million and the design was fast-tracked and completed in a 4-month time frame because of grant requirements of the U. S. Economic Development Administration. Construction was completed within the grant time frame. The project entailed permit applications from the U. S. Army Corps of Engineers for wetland disturbance, WV Department of Health for sewer and water extensions, WV Department of Environmental Protection for stormwater management and erosion control (NPDES) and WV Public Lands Corporation for stream crossings. Road design was reviewed and approved by the WV Division of Highways because the Division was providing grant funding for the 2,000-foot access road.

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COLDWATER CREEK DISTRIBUTION CENTER

ALSC Architects and Parkersburg/Wood County Area Development Corporation
Parkersburg, West Virginia

Aerial view of facility in late summer. The 8.5-acre distribution center under construction is located in the upper right corner with parking areas to the left. A 7.5-acre wetland mitigation area was designed and constructed between Interstate 77 and the new facility. Future expansion area was also brought up to grade allowing Coldwater Creek to potentially double their building size with minimal earthwork activities.

Potesta & Associates, Inc. (POTESTA) was retained by ALSC Architects and the Parkersburg/Wood County Area Development Corporation (PWCADC) to prepare a site preparation plan and perform permitting services for a new 8.5-acre distribution center. The proposed 65-acre site was located in Parkersburg, West Virginia and contained several difficult site constraints including moisture sensitive soils, wetlands, areas below the 100-year flood plain, relocation of high voltage power lines, springs and perched groundwater conditions. In addition, the construction schedule required ground breaking in early winter. POTESTA designed and bid the project in six weeks and construction started in early January. The building pad was completed by March and the remainder of construction by July. The project, in general, involved clearing and grubbing, approximately 350,000 cubic yards of excavation, an extensive stormwater collection and detention system, a constructed wetland and other miscellaneous improvements. The project was completed below the engineer's cost estimate and within the project budget allotted by PWCADC. In fact, POTESTA's engineer's estimate was within 4 percent of the average of all bids received for the project.

Excavation was performed with a variety of excavators, articulated trucks and large bulldozers. POTESTA's earthwork estimate was within 2 percent of actual excavation based on field cross sections, and resulted in a balanced site.

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KENNA RIDGE BUSINESS PARK

Double C Enterprises/Jackson County Development Authority
Kenna, West Virginia

Potesta & Associates, Inc. (POTESTA) was retained by Double C Enterprises and the Jackson County Development Authority to prepare a site development plan and to perform permitting, geotechnical design and construction survey stakeout services for an approximately 65-acre development near Kenna, West Virginia.

POTESTA prepared the topographic mapping for the project from ground survey information. The project included the design of four valley fills and a single side hill fill to accommodate approximately 740,000-cubic yards of excavated soil and rock.

The fill locations were evaluated for geotechnical stability following the completion of test pits and borings. Project staff completed environmental permitting for the project including the preparation and submittal of NPDES construction stormwater permits and U.S. Army Corps of Engineers Section 404 permits.

POTESTA also prepared access roadway plans for the business park entrance. This work was coordinated through the West Virginia Division of Highways to meet current design standards for the Jackson County Development Authority. POTESTA personnel provided daily construction observation of construction efforts involving survey stakeout, soil density testing and sediment pond installation.

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Project Abstract

PARKERSBURG/WOOD COUNTY INDUSTRIAL PARK

Parkersburg/Wood County Area Development Corporation

Parkersburg, West Virginia

Potesta & Associates, Inc. (POTESTA) provided comprehensive services for the development of an industrial site and access road at the Parkersburg/Wood County Industrial Park. POTESTA provided site development plans to Luigino's, Inc., a leading producer of frozen foods, for a 34-acre site located within the park. A 2/3-mile long access road to the site was designed to the standards of the West Virginia Division of Highways (WVDOH) with joint construction by the Parkersburg/Wood County Area Development Corporation.

Design began with a wetland delineation of the area and an evaluation of the impact resulting from the proposed construction activities on the wetlands. The evaluation indicated a loss of wetlands. To offset this loss, POTESTA prepared a mitigation plan to develop new wetlands to replace those lost as a result of construction. The plan provided for the development of replacement wetlands at a 2:1 or 3:1 ratio, depending on the wetlands being classified as emergent, scrub-shrub or forested. A planting scheme, water budget and monitoring plan were developed and approved by the U.S. Army Corps of Engineers (USCOE), West Virginia Department of Natural Resources, the United States Fish and Wildlife Service and the U. S. Environmental Protection Agency. POTESTA also obtained the required 404/401 and NPDES construction permits.

Construction of the access road required a 120-inch culvert to be designed for Jackson Run, a tributary of the Little Kanawha River. POTESTA performed the hydrologic and hydraulic design to determine the peak discharge of the contributory watershed for numerous design storms using Natural Resources Conservation Service design methodology. This analysis was then utilized in the USCOE computer models to select the proper culvert size based upon allowable headwater depths for the site. A storm water management plan was also developed for the entire site which addressed sedimentation/detention ponds, drainage channels and diversion of runoff to maintain adequate levels in the wetlands. POTESTA prepared complete project specifications and provided contract management and construction monitoring.

POTESTA assisted in developing the overall site grading and drainage plans for the 34-acre industrial development for the proposed Luigino's facility. Other services provided included geotechnical exploration, surveying and construction management.

The access road was designed to meet the WVDOH standards with a complete set of Construction and Right-of-Ways Plans being prepared. The plans included details on earthwork, grading, alignment, pavement, drainage, maintenance of traffic during construction, cross sections, guard rails, signing and pavement marking.

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Project Abstract

DESIGN OF STORMWATER MANAGEMENT PLAN, ACCESS ROAD, AND SITE DEVELOPMENT PLAN FOR FUTURE SITE OF LUIGINO'S FOOD PROCESSING, INC.

Parkersburg/Wood County Area Development Corporation

Parkersburg, West Virginia

Potesta & Associates, Inc. (POTESTA) performed the hydrologic and hydraulic design for the relocation of Jackson Run, a tributary of the Little Kanawha River. Included in the hydrologic analyses were the determination of the peak discharge of the contributory watershed for numerous design storms using Natural Resources Conservation Service design methodology. This data was then utilized in United States Army Corps of Engineers computer models to select the proper culvert size based on allowable headwater depths for the site. POTESTA coordinated the permitting of the stream relocation/culvert installation as well as the design and permitting of a wetland mitigation area with the appropriate state and federal agencies. A stormwater management plan was also developed for the entire site which addressed sedimentation/detention ponds, drainage channels, and the diversion of runoff to maintain adequate levels in the wetlands.

POTESTA assisted in developing the overall site grading plan for the 34-acre industrial development near Parkersburg. Other services included construction management, surveying, design of the access road, a geotechnical exploration of the site, and coordination of access to other parcels in the industrial park.

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Project Abstract

ROANE COUNTY INDUSTRIAL PARK

Roane County Development Authority

Spencer, West Virginia

Potesta & Associates, Inc. (POTESTA) prepared site development construction documents for National Industrial Wholesale Lumber, a building products warehouse, which was one of the early tenants of Roane County's new industrial park. POTESTA provided a boundary survey, site layout, grading, utilities and a stormwater management plan.

An NPDES permit was prepared for and approved by the West Virginia Department of Environmental Protection for the project. POTESTA also prepared the park's access road construction documents in accordance with West Virginia Department of Highways (WVDOH) specifications. This nearly one-half mile road was surveyed and right-of-way monuments set for the WVDOH to take the road into the state's highway system.

Construction monitoring and field testing were also provided.

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Project Abstract

ONE-HALF MILE ACCESS ROAD FROM COUNTY RT. 29 TO ROANE COUNTY INDUSTRIAL PARK

Roane County Development Authority

Spencer, West Virginia

Potesta & Associates, Inc. (POTESTA) prepared site development construction documents for National Industrial Wholesale Lumber, a building products warehouse, which was one of the early tenants of Roane County's new industrial park. POTESTA provided a boundary survey, site layout, grading, utilities and a stormwater management plan.

POTESTA prepared surveyed mapping, right-of-way plans, roadway design and provided sections and plans, traffic maintenance plans, signing and pavement markings and erosion and sediment control plans. POTESTA was selected to provide construction monitoring after the design was completed and approved. POTESTA also prepared and negotiated applications for permits required for the project.

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Project Abstract

TUCKER COUNTY INDUSTRIAL PARK — CONSTRUCTION OF ADDITIONAL WATER AND SEWER LINE

Tucker County Development Authority

Tucker County, West Virginia

After completion of initial construction at the Tucker County Industrial Park, additional monies remained. The owner, Tucker County Development Authority, authorized Potesta & Associates, Inc. (POTESTA) to prepare bidding documents for construction of additional water and sewer lines at the site, using the remaining monies. More specifically, POTESTA:

1. Completed ground survey to develop topographic mapping to reflect as constructed conditions after the first phase.

2. Prepared drawings and specifications depicting the construction of an additional 1,000 feet of gravity sewer line, including five manholes and 500 feet of additional water line, including construction through wetlands and across a stream.

3. Prepared permit applications for crossing of the stream and wetlands, and to obtain approval from the West Virginia Bureau for Public Health.

4. Prepared bidding documents and coordinated obtaining approval from the United States Economic Development Agency.

5. Presented the project at a pre-bid meeting, and prepared addenda.

6. Compiled contractor bid information.

7. Provided construction phase services, including attending preconstruction meeting, reviewing and commenting on shop drawings on manholes, pipe and other materials; and providing nearly full-time construction observation services.

The additional water and sewer lines were successfully installed.

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FEASIBILITY OF MIXED-USE INDUSTRIAL PARK DEVELOPMENT

Business & Industrial Development Corporation
Chelyan, West Virginia

Potesta & Associates, Inc. (POTESTA) was retained by Business & Industrial Development Corporation (BIDCO) to perform a design study associated with providing access, utilities and development of an approximately 700-acre tract for a mixed-use light industrial park located in eastern Kanawha County, West Virginia. The envisioned development would consist of 400 acres of nearly flat area to be used as light industrial/commercial use. Residential areas would be sited along the ridge tops around the perimeter.

POTESTA evaluated three possible access routes to the property, including determination of possible roadway grades, alignment, drainage structures, and associated cost of development. This includes evaluating requirements and costs associated with extending utilities (water, sewer, gas and telephone) to the site. Different earthwork/grading plans for development of the site into usable parcels were considered.

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Project Abstract

MANSOUR INDUSTRIAL SITE
Cabell/Wayne Port District

Huntington, West Virginia

Potesta & Associates, Inc. (POTESTA) prepared a conceptual facility layout for the Mansour Industrial Site for the Cabell/Wayne Port District. The site encompassed 89.7 acres located between State Route 2 and the Ohio River just north of the Greenbottom Wildlife Management Area. The conceptual layout was presented in a report entitled Conceptual Design and Engineer's Construction Cost Estimate for Mansour Industrial Site. This report included the location and status of existing utilities near the proposed site, an assessment of extending utilities to provide service to the site, and the cost associated with extension of utilities. The engineer's cost estimate for developing the site as a port facility included earthwork/drainage, access road construction, stormwater drainage control systems, dock construction, and utility service. Additionally, POTESTA prepared a report entitled Draft Environmental Reconnaissance Report for Mansour Industrial Site. This report was based on a Phase I Environmental Site Assessment and a wetland delineation.

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New River Community & Technical College

Master Plan

ZMM
ARCHITECTS & ENGINEERS

LOCATION:
Summersville, WV

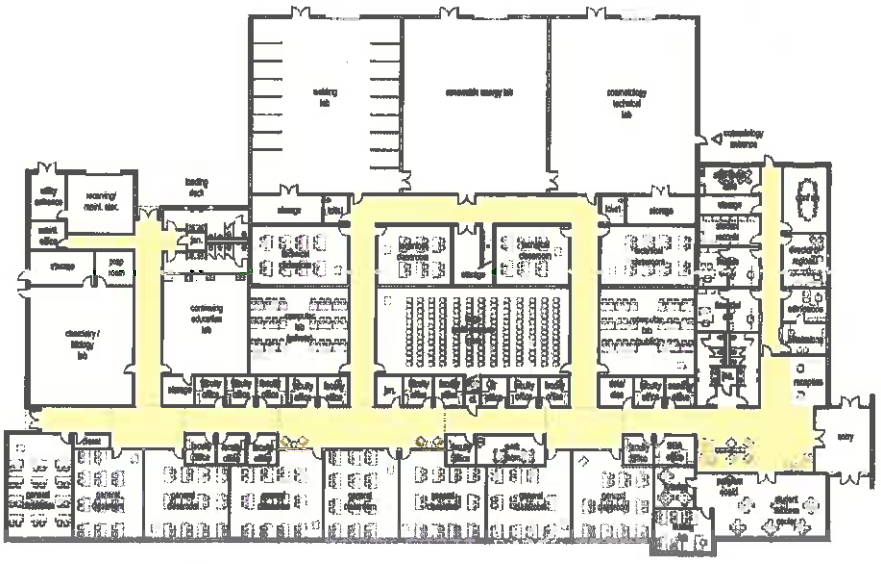
SIZE:
43,000 SF

OWNER:
Nicholas County Building Commission
700 Main Street
Suite #216
Summersville, WV 26651

CONTACT:
Greg Boso, President
G.L. Boso & Associates
322 Turnpike Road
Summersville, WV 26651
304.872.2911

The new educational building will house the operations of New River Community and Technical College. The main program areas for the building are Administration, General Instruction, Workforce/Adult Education, Student Areas, Support Areas, and Technical Labs. Approximately 14,000 SF of the building will house technical programs of the college such as welding, renewable energy, mining, and CDL training. This area will be designed with flexibility for the future. The exterior materials will consist of brick and metal panel, with accents of metal and glass.

The facility will be placed on the site to utilize maximum daylight opportunities. The building's long axis will be oriented from east to west, with all the general instruction classrooms oriented south. A roof overhang on the south elevation will be designed so the low, winter sun will be welcomed while the high, summer sun will be blocked. This will allow the general instruction classrooms to use less energy for lighting, heating, and cooling. The technical labs will be surrounded with high windows, so the technical labs can reduce energy costs as well.



Joint Interagency Training & Education Center

WVARNG

ZMM
ARCHITECTS & ENGINEERS

LOCATION:
Kingwood, WV

SIZE:
285,000 SF

COMPLETION:
2013

COST:
$78.4M

OWNER:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

AWARD:
2011 AIA Honor Award
West Virginia Chapter
Excellence in Architecture

ZMM Architects and Engineers, in association with AECOM, is providing architectural and engineering design services for the Joint Interagency Training and Education Center (JITEC), an Army National Guard campus-style facility for training and operational mission support. Sited on 30 acres at the northern end of Camp Dawson between the Cheat River and the foot of Brier Mountain, this 283,000-SF project includes the design of a new operations building; expansion of the billeting facility; renovation of the training facility; creation of a new base entry checkpoint and visitor center; and design for walkway connectors between all the facilities.

The project began with a review of the existing base master plan, followed by a revision of the master plan concept. JITEC is a training and educational facility – the vision behind the site design and updated master plan is that of a college campus atmosphere. The clients goal was to create a campus environment that integrates existing buildings with new ones, which was accomplished by using compatible, yet distinct building materials.

The new facilities are designed to meet all anti-terrorism/force protection criteria and are slated for LEED-NC Gold Certification from the U.S. Green Building Council. The new 82,000-SF operations building is prominently sited as the main focal point upon entering Camp Dawson through the secure access control point and visitor's center, also designed by AECOM. The building's exterior complements its West Virginia setting. The entire building front, composed of glass and pre-cast concrete walls, is open and inviting with glazing that reflects the surrounding trees and hills.

Joint Interagency Training & Education Center

Security requirements for the command center influenced the design of the attached, copper-clad "black box" that is an homage to the native rock stratification seen throughout the state.

The building consists of four distinct areas: the Joint Operations Center; a suite of secure training rooms; base headquarters and JITEC administrative offices; and a 6,000 SF server and telecommunications room.

Entry to the Joint Operations Center (JOC) is provided by a secure mantrap adjacent to a dedicated security office. Built to SCIF standards, the JOC contains a state of the art command center housing 48 permanent work stations in a theater-style configuration facing a large video wall, flanked by conference rooms and offices for both officers and support staff. Within the JOC is a secure area consisting of workstations, offices, and two divisible conference rooms with secure video conferencing capabilities. The secure area construction dictates a windowless environment, requiring proper lighting and creative use of materials to create an agreeable work atmosphere.

The 180,000-SF billeting (hotel) expansion more than triples the facility size and increases the total capacity from 189 guest rooms to 600 guest rooms and suites. Designed to relate to the existing architecture with similar scale, materials, textures, and massing, the addition also brings in new elements, such as iconic glazed building corner elements, to integrate the design of the new operations building. A new dedicated lobby with terrazzo tile flooring leads to a monumental stair with terrazzo treads, open risers, and a glass/stainless steel railing for access to the open lounge areas on the second and third floors.

The lobby's design provides a hotel atmosphere, underscored by the new Liberty Lounge, an upscale bar and restaurant area, with wood finishes salvaged from the gymnasium floor in the existing headquarters building. The new six "executive suites", are designed to the full amenities of corporate hotels.

Jackson County Armed Forces Reserve Center

WVARNG

ZMM
ARCHITECTS & ENGINEERS

LOCATION:
Millwood, WV

SIZE:
75,000 SF

COST:
$20M

COMPLETION:
Fall 2011

CONTACT:
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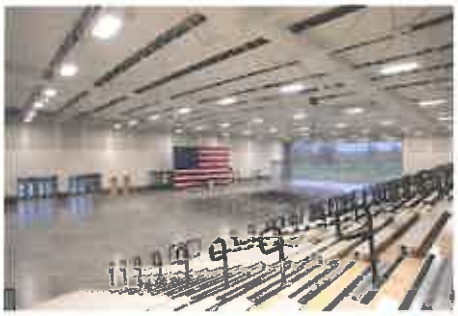
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446



The new facility houses both the West Virginia Army National Guard (WVARNG) and the United States Army Reserves (USAR). The primary user for the WVARNG will be DET 1 821st Engineering Company, who will be supported by a FSC of the 1092nd. USAR occupants will include PLT AMMO 261 OD and PLT 1 (Postal) and PLT 6 (Postal) of the 44th Personnel Company. The facility also includes an expanded Drill Hall that can serve as a convention and meeting space, which is being funded by the Jackson County Commission, additional federal appropriations, and the State of West Virginia National Guard.

The relationship between the structures became crucial to the site layout. The new facility is centered on the existing house, increasing the exposure of the facility from Route 2 - the major route of vehicular travel that parallels the Ohio River. Once the aesthetic of the building was established, the massing of the new facility was defined by breaking-down the facility into smaller mass elements that more closely reflected the Georgian Style, and that of many Army posts, such as Fort Meyer in Northern Virginia. The larger programmatic elements such as the Drill Hall and the storage areas employ an aesthetic that more closely implies their function.

The layout of the facility includes a main entry with the USAR and WVARNG Recruiting, Family Support, and Administrative areas located on separate sides (USAR to the left, WVARNG to the right). A transverse wing on the left houses all functions that have the potential for public use, such as the Drill Hall and the Educational component, while all primary military spaces developed along a similar perpendicular wing on the right. This allows for separate entries to be developed for public functions, while the remainder of the facility can be secured. The layout also creates a large central courtyard or parade field that would be located at lower grade to define the edge facing the river. This edge is defined by a canopy that connects storage and locker areas to the expanded Drill Hall.

Logan-Mingo Readiness Center

WVARNG

ZMM
ARCHITECTS & ENGINEERS

LOCATION:
Holden, WV

SIZE:
54,000 SF

COMPLETION:
2015

COST:
$12M

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

The design of the Logan-Mingo Readiness center was developed by examining both the program and building site, and developing strategies to design a facility that is functional, responds to site, security, and aesthetic parameters, while requiring minimal maintenance.

The building layout was developed by working closely with the end-users to determine the appropriate configuration of building spaces to maximize the efficiency of the operations, and to respond to the unique missions of the 150th Armored Reconnaissance Squadron and the 156th Military Police (LNO) Detachment. Clear separation of "public" and "private" areas within the facility, unique office configurations related to training requirements, and the addition of State Funded additional spaces.

The exterior (and in many cases the interior) aesthetic of the facility was driven by the location of the Readiness Center within an industrial park on a reclaimed surface mined site. The decision led to the use of reinforced cast-in-place retaining walls that became both a functional and visual focus. Similar pre-cast walls are used to anchor the facility at the Distance Learning Center, while a cast-in-place retaining wall serves as a part of the Anti-Terrorism/Force Protection design.

Construction & Facilities Management Office

WVARNG

ZMM
ARCHITECTS & ENGINEERS

LOCATION:
Charleston, WV

SIZE:
19,935 SF

COST:
$3.5M

COMPLETION:
2008

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6539

AWARD:
2009 AIA Merit Award,
West Virginia Chapter,
Achievement in Architecture

The Construction and Facilities Management Office (CFMO) Expansion project will bring all of the operations of the CFMO together under one roof. The branches that will occupy this facility include: Director of Engineering, Environmental, Planning and Programming, Facility Operations & Maintenance, Business Management, Resource Management, and Design and Construction. This new facility is located slightly to the front, and adjacent to the existing facility, lending prominence to the new construction, and providing a new aesthetic to the entire complex.

This transitional space was designed to connect the two structures, while maintaining a connection to the outside through use of natural light, direct visual connections to the exterior, large volumes, irregular geometries, and the use of natural materials.

The entry design was coordinated with the Recruiting and Retention building to create an outdoor courtyard, along with new sidewalks, stairs and signage. The entry roof is sloped to provide a greater massing, while a lower canopy provides scale and protection from the elements. Large gathering and work spaces were located on the north elevation to take advantage of large expanses of glazing located to capture indirect light and views of Coonskin Park.

Morgantown Readiness Center

WVARNG

ZMM
ARCHITECTS & ENGINEERS

LOCATION:
Morgantown, WV

SIZE:
54,000 SF

COMPLETION:
2013

COST:
$18.5M

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

The Morgantown Readiness Center is a unique military facility for several reasons. While the Readiness Center supports traditional military functions including the 1-201st Field Artillery, a significant portion of the Morgantown Readiness Center supports the 249th Army Band. To support the band, the Readiness Center contains a performance hall, pre-function spaces, as well as a variety of training and rehearsal areas.

To efficiently create the stage and performance area the design team utilized a variety of dual function spaces. The stage is actually a large rehearsal space with an adjacent elevated recording area. Two large operable partitions are used – one to separate the rehearsal area from the remainder of the stage and the auditorium – while the other separates the auditorium from the Drill Hall. This configuration allowed the design team to maximize the West Virginia Army National Guard's investment by utilizing federally authorized space to also function as a large performance area. Acoustically, this challenge was met by creating a Drill Hall with an irregular shape that was contained within a rectilinear sloped barrel arch form. The geometry was complimented by acoustically engineered interior surfaces and finishes to create a vibrant and rich auditorium.

The facility is also unique due to its location on an abandoned airport runway at the Morgantown Municipal Airport. The 54,000 SF Readiness Center occupies a 35 acre tract at the airport. Additionally, the Readiness Center is located approximately twenty (20) miles from Camp Dawson, a large State and Federal training campus. As troops will often be travelling to Camp Dawson through the Morgantown Readiness Center, the facility needed to function as a 'gateway.'

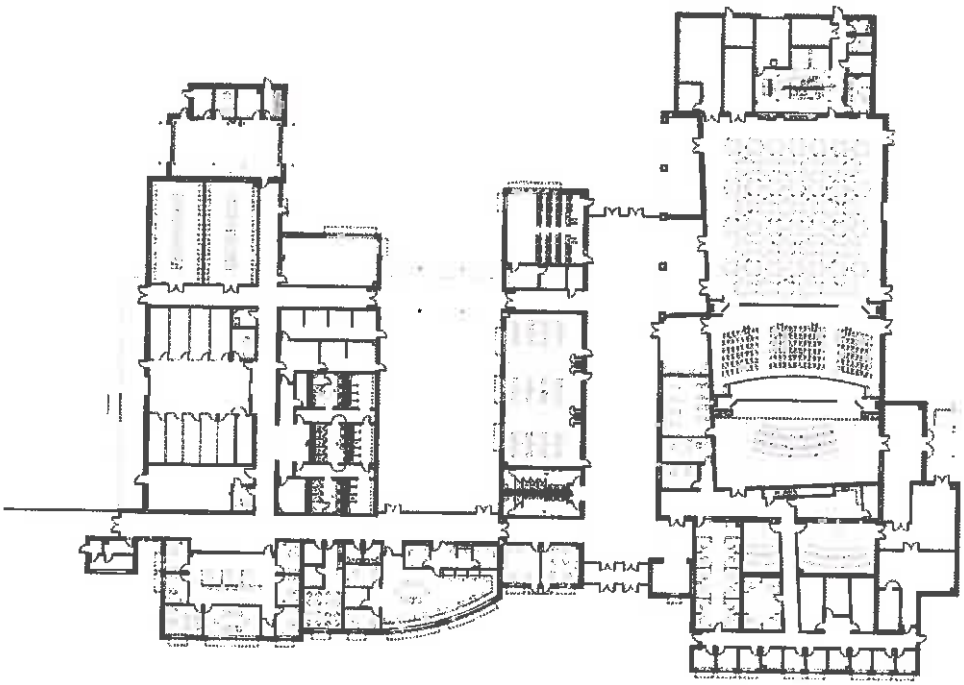
Morgantown Readiness Center

WVARNG

The creation of a 'gateway' facility was accomplished through exterior material choices (compatible with Camp Dawson), as well as the decision to utilize a tower-like feature to mark entry – a very prominent feature of the Regional Training Institute (RTI) at Camp Dawson. Where the RTI utilized a large cylindrical mass, the tower at the Morgantown Readiness Center respects the context of the former runway by reflecting the aesthetic of an airport control tower.

The Morgantown Readiness Center is also a sustainable building, and is in the process of pursuing LEED Certification from the USGBC. The 'U' shaped layout of the facility improves access to daylighting and views, while also limiting public access to the Guard's administrative and storage areas. Additional sustainable features include a reflective roof, the use of regional materials, and efficient lighting and HVAC systems.

While many features are addressed in the design of the Morgantown Readiness Center, the final result is a harmonious composition that reflects both its function and the environment, while deferring to its location on an abandoned runway.



Award Winning Design

ZMM
ARCHITECTS & ENGINEERS

2016

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Interior Design
Christ Church United Methodist
Charleston, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Gauley River Elementary School
Craigsville, West Virginia

2015

AIA West Virginia Chapter: Honor Award
Achievement in Architecture in Sustainable Design
Edgewood Elementary School
Charleston, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Kenna Pk-5 School
Kenna, West Virginia

2014

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Sustainable Design
Huntington East Middle School
Huntington, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Southern West Virginia Community & Technical College
Williamson, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Interiors/Graphics
Girl Scouts of Black Diamond Council
Charleston, West Virginia

2012

AIA West Virginia Chapter: Honor Award
Excellence in Architecture
West Virginia Housing Development Fund Building
Charleston, West Virginia

2011

AIA West Virginia Chapter: Honor Award
Excellence in Architecture in Historical Preservation
Southside Elementary/Huntington Middle School
Huntington, West Virginia

AIA West Virginia Chapter: Honor Award
Excellence in Architecture
Joint Interagency Training & Education Center
Kingwood, West Virginia

AIA West Virginia Chapter: Merit Award
Excellence in Architecture in Interiors
WV State Office Building #5, 10th Floor Renovation
Charleston, West Virginia

2010

AIA West Virginia Chapter: Honor Award
Excellence in Architecture
Hacker Valley PK-8 School
Hacker Valley, West Virginia

2009

AIA West Virginia Chapter: Merit Award
Excellence in Architecture
Construction & Facilities Management Office (CFMO)
Charleston, West Virginia

2008

AIA West Virginia Chapter: Honor Award
Excellence in Architecture
Erma Byrd Center
Beaver, West Virginia

MANAGEMENT AND STAFFING

Organizational Chart

Project Management

ZMM
Master Planning/Building Architectural Services

Project Manager
Mark Kiser, PE – 33 Yrs.

Engineering Principal-in-Charge
Dana L. Burns, PE, PS – 37 Yrs.

Project Tasks

Civil/Site/Storm Water/ Grading/Roadway Systems/Master Plan Development
**Jarrett Smith, PE – 12 Yrs.*
Robert Ammirato, PE – 13 Yrs.
Mark Isabell – 10 Yrs.
Jason Gandee – 8 Yrs.
Jessica Boggs – 4 Yr.
Angela Pugh – 8 Yrs.
Jordan Beard – 2 Yrs.

Water/Sewer/ Utility Relocation/Private Utility Systems
**Pat Taylor, PE – 27 Yrs.*
Mark Sankoff, PE, PS – 32 Yrs.
Terry Moran, PE – 26 Yrs.

Support Staff

Soils and Geotechnical Evaluations
Chris Grose, LRS – 25 Yrs.
Dave Sharp, PE – 20 Yrs.
Peter Potesta – 4 Yrs.
Jeremi Stawovy, EIT - 5 Yrs.

Surveying
**Victor Dawson, PS – 34 Yrs.*
Brad Starkey – 25 Yrs.
Joe Crowder, PS – 27 Yrs.
Charles Shaffer – 14 Yrs.
Howard Samples - 18 Yrs.
Rusty Hunter – 34 Yrs.
Ryan Bennett, SI - 3 Yrs.
Greg Hodges - 21 Yrs.

Construction Monitoring
Robert Lamm – 15 Yrs.
Gary Bridgette – 10 Yrs.
Matt Kirk – 42 Yrs.
Bill Cox - 18 Yrs.

CAD Designers
Michael Sankoff – 27 Yrs.
Brian Leedy – 16 Yrs.
Chuck Bird – 23 Yrs.
Russ Lester – 26 Yrs.
Joe Martin– 22 Yrs.

**Task Leaders*

DANA L. BURNS, P.E., P.S.
Vice President

EDUCATION

M.S. Civil Engineering, 1979
West Virginia University

B.S. Civil Engineering, 1978
West Virginia University

EMPLOYMENT HISTORY

1997-Present	Potesta & Associates, Inc.
1994-1997	Terradon
1979-1994	GAI Consultants, Inc.
1978-1979	West Virginia University
1976-1977	West Virginia Department of Highways (summers)

PROFESSIONAL REGISTRATIONS

Professional Engineer – West Virginia, Illinois

Professional Surveyor – West Virginia

PROFESSIONAL CERTIFICATIONS

40-Hour Health and Safety Training

SERVICE ON BOARDS AND COMMISSIONS

Environmental/Technical Committee member – West Virginia Coal Association

Environmental Committee member – Kentucky Coal Association

Past Board of Directors member and current Waste Team Chairman on the Environmental Safety and Health Committee – West Virginia Manufacturers Association

Environmental and Safety Committee member – Independent Oil and Gas Association of West Virginia

Environmental Committee member – West Virginia Oil and Natural Gas Association

Past President – West Virginia Society of Professional Engineers, Professional Engineers in Private Practice

Past President and past Board of Directors member – American Council of Engineering Companies West Virginia Chapter

Past Chairman of Transportation Committee – American Council of Engineering Companies West Virginia Chapter

Past Board of Directors member – Society of American Military Engineers Huntington Post

Member Committee D-18 on Soil and Rock – American Society for Testing and Materials (ASTM)

PROFESSIONAL AFFLIATIONS

American Society of Civil Engineers
National Society of Professional Engineers
WV Society of Professional Surveyors

AREAS OF SPECIALIZATION

Management of design and permitting of civil, environmental, geotechnical, and mining engineering projects. Siting, design, and permitting of industrial and municipal waste disposal sites; reclamation of abandoned mine lands; and development of stormwater management plans and groundwater sampling programs. Environmental/reclamation liability assessments. Development of site plans for commercial and industrial facilities including hydrologic and hydraulic analyses. Expert witness testimony. Directs engineering division including day-to-day operation of headquarters and three branch offices concerning staffing, coordination, training,

business development; and overall management of technical and support staff.

PROFESSIONAL EXPERIENCE

Civil/Site Design

Utility extension, site grading plans, stormwater management, roadway design, and permitting for site development:

- Residential subdivisions
- Commercial developments

University of Charleston – Principal-in-Charge for the following projects:

- Development of topographic mapping of campus
- Evaluation of storm sewer system
- Civil site services – UC Pharmacy School, New Hall, Middle Hall, and Brotherton Hall
- Design of new campus entrance roadway

Marshall University – Principal-in-Charge for the following projects:

- 400 bed housing project
- Biotechnology Center
- Fifth Avenue parking and 6th Avenue parking facility
- Jomie Jazz Center
- Childcare Center
- Mid-Ohio Valley Center
- Campus landscape master use plan
- Campus improvements project
- MU Graduate College South Charleston campus
- Student Center and Henderson Center
- Bookstore addition
- University Heights

Glenville State University – Principal-in-Charge for the following projects:

- Student Residence Hall
- Athletic Convocation Center and Forestry/Survey Class Center

West Virginia University – Principal-in-Charge for a sidewalk repair project located near Allen Hall on the Evansdale Campus in Morgantown, West Virginia.

The Villages at Coolfont – Principal-in-Charge to provide environmental and engineering consulting services for the redevelopment of the Coolfont Recreation property in Morgan County, West Virginia to create a second home community with high-end amenities.

- Phase I Environmental Site Assessment
- American Land Title Association (ALTA) boundary and property survey of 997 acres
- Completed an assessment of the facility's sanitary sewer wastewater treatment plant to facilitate acquisition of the property.
- Participated in week long planning charette with client, land planners, and other design consultants to assess characteristics of property, identify opportunities and constraints, obtain input from local residents and businesses, and develop design guidelines.
- Land use plan including 1,300 homes, a village center, spa, expansion of an existing lake, a proposed second lake, walking/hiking/biking trails, and the necessary infrastructure.
- Civil engineering design for potable water and wastewater treatment facilities.
- Selected source well locations, drilled 3 source test wells, and completed field testing and permitting.
- Designed 300 gallon per minute potable water treatment plant.
- Designed 2- 316,000 gallon water storage tanks and 75,000 LF of distribution system.
- Completed the design and permitting for a 448,000 gallon per day membrane bioreactor wastewater treatment plant, including the design of a 70,000 LF collection system.
- Assisted with permitting required for the development of the new lake and upgrades/expansion of the existing lake (included were Section 404 individual permit and Section 401 water quality certification).
- Prepared roadway and stormwater management plans, including typical pavement sections, road profiles, geometric layout plan, culvert and drop inlet sizing, drainage conveyance pipe and channel profiles, and miscellaneous stormwater management details.

City of Charleston – Inspection and preparation of rehabilitation design for Parking Garage No. 1.

Tucker County Industrial Park – Principal-in-Charge for the design which included water and sewer lines,

stormwater management design, roadway design, pavement design, site grading plan, master plan, and geotechnical exploration/foundation recommendations.
Principal-in-Charge for site grading plans, stormwater management system, site surveying, roadway/parking lot design, wetland delineation/mitigation, and construction monitoring for the 400,000 square foot Coldwater Creek distribution center in Parkersburg, West Virginia.

Principal-in-Charge for the civil/site design for the new Sissonville Middle School in Kanawha County, West Virginia. Project included site grading plan with more than 230,000 cubic yards of earthwork to obtain 20 acres of level ground for a 74,000 square foot school, football field, soccer field, baseball field, access roadways, and parking areas. Project included utility designs for water service and sanitary and sewer. Stormwater collection systems and erosion and sediment control plan/permit completed.

Principal-in-Charge for civil/site design for new Riverview High School and Bradshaw Elementary School in McDowell County, West Virginia. Project included 2,500 linear feet of relocated WV Route 80, relocation of 1,200 feet of Oozley Branch, and site work (grading, stormwater drainage, geotechnical recommendations, sanitary sewer, water, and electrical services) to serve the two schools. Project design included site survey, geotechnical exploration, foundation recommendations, design of excavation slopes, layout of schools, parking areas and athletic fields, utility design, roadway relocations plans, and stream relocations plans. Responsible for the design and preparation of contract bid documents (specifications and drawings) for civil/site work. POTESTA served as a subconsultant to ZMM on this project.

Principal-in-Charge for civil/site design and permitting associated with the construction of three synthetic fuel pellet plants in McDowell County, Nicholas County, and Kanawha County, West Virginia. Project included developing synthetic fuel manufacturing facilities on inactive surface mining sites. Services included subsurface exploration, foundation recommendations, grading plans, stormwater management plans, preparation of permit applications, and construction monitoring for site grading and foundation construction. The McDowell County site included a water source study to identify and select water sources for the manufacturing process. The three plants had a construction cost of $25 million. Project was a design/build arrangement with POTESTA working directly for the owner.

Carmeuse Lime & Stone – Principal-in-Charge of engineering and environmental services for the expansion of current quarry operations at Winchester quarry in Winchester, Virginia. The expansion includes the addition of two new vertical lime kilns and associated equipment, increasing their current aggregate crushing operation, and expanding their rail system to allow for increased shipping of product.

- Design included grading, stormwater management, and an access road crossing for a rail loop encircling the lime kilns and aggregate crushing areas with rail spurs for loading and unloading of product to connect to two mainline rail carriers.
- The total project track length consists of approximately 29,000 linear feet of rail.
- The design of the rail expansion includes trackside ditches, culverts, stormwater management systems, gas line relocations and crossings, rail crossings, and internal plant roadways, as well as grading for the expanded aggregate plant and lime kilns.
- Additional designs included civil/site services for a new office building and design of the sanitary water treatment system for this building.
- Acquired the necessary approvals to construct this project, such as approvals from local planning and zoning, inspections, health departments, and state governments such as Virginia Department of Transportation, Department of Environmental Quality (DEQ) and Department of Mining and Mineral Extraction (DMME).
- Conducted wetland delineations, developed reports, and completed applications to the Norfolk District (Northern Virginia field office) of the United States Army Corps of Engineers (USACE).

Development of specifications for a sand mound treatment system in the U.S. Air Training Center near Pittsburgh, Pennsylvania.

Water Lines, Water Storage Tanks, and Water Treatment Plants

New extensions and replacement of existing lines:

- Cassity Fork Water Supply Extension Project – Randolph County, WV (Project Manager)

- Godby Branch Water Supply Extension Project – Logan County, WV (Project Manager)
- Beaver Creek Water Supply Extension – Upshur County, WV (Project Manager)
- Buff Creek/Trace Fork – Putnam County, WV (Principal-in-Charge)
- Route 60 – Putnam County, WV (Principal-in-Charge)
- Boone County PSD numerous extensions – Boone County, WV (Principal-in-Charge)

West Virginia American Water Company – Principal-in-Charge for construction administration/monitoring for Poca River Water line Extension Project, Cabell County Water Line Extension Project, Contract No. 7, Spite Road Water Line Extension Project, and Fisher Ridge Water Line Extension Project. Work included construction monitoring, preparation of weekly reports, review of contractor submittals, review of contractor invoices, and preparation of records drawings for 100,000+ linear feet of water line extensions.

City of Philippi – Principal-in-Charge for municipal water system upgrade project. Work included design of two replacement booster stations, two new water storage tanks, new pumps for an existing booster station, a 1,500-foot water line extension, and telemetry systems. Drawings, specifications, and a cost estimate were prepared.

West Virginia American Water Company – Principal-in-Charge for Residuals Handling Facility project at the 32 MGD Kanawha Valley Water Treatment Plant, including coordination design consultant. Design included sludge pumping station, 950,000-gallon reinforced concrete gravity thickener, two belt filter presses, chemical feed systems, plate settler, and associated control and piping. Work included preparing design concept, surveying, subsurface exploration, preparation of drawings, specifications, cost estimate and permit applications, conductance of pre-bid public relations meeting, evaluation of bids, construction observation, review of contractor submittals, review of change order requests, and review of contractor invoices.

West Virginia American Water Company – Principal-in-Charge for evaluation of Town of Pineville water treatment plant and water distribution system, including observation of system during site visit, records review, discussions with regulatory officials, and issuance of findings in a report.

Tucker County Development Authority – Principal-in-Charge for design of approximately 10,000 feet of water line and sewer line to serve an industrial park, including a lift station. Drawings, specifications, and a cost estimate were prepared. Also performed construction administration services.

West Virginia Bureau for Public Health – Principal-in-Charge for services associated with Source Water Assessment Protection Plans (SWAPP) for 38 public water systems throughout West Virginia. Services provided included windshield surveys to identify and locate (via GPS) potential contaminant sources (PCS's), review of regulatory databases, entering data into Access database, and preparation of summary reports.

City of Philippi – Principal-in-Charge for relocation of water lines due to proposed roadway. Relocation included approximately 4,000 feet of 1-inch to 12-inch diameter pipe, fire hydrants, meters, and valves. Prepared construction drawings, specifications, and quantities.

West Virginia American Water Company – Principal-in-Charge for hydraulic analysis for water supply extensions (total of 23 miles) in Cabell County, West Virginia, including line sizing and design of booster station and PRVs.

Management of design, permitting, and construction monitoring of more than 40 miles of new waterline serving rural communities in southern West Virginia.

West Virginia Department of Abandoned Mine Lands – Detailed design and preparation of construction drawings, specifications, contractor's bid sheet, and engineer's cost estimate for six-mile water line extension including fire protection. Project included 90,000-gallon water tank, booster station, and pressure relief valves. Extension tied into Norton Harding Jimtown PSD System and served town of Cassity in Randolph County.

West Virginia Department of Abandoned Mine Lands – Detailed design and preparation of construction drawings, specifications, contractor's bid sheet, and engineer's cost estimate for a half-mile water line extension to serve Beaver Creek near Junior in Randolph County.

West Virginia Department of Abandoned Mine Lands– Management of four Phase II water studies and five Phase I water studies to determine if water supplies had been affected by coal mining. Work included resident

interviews, mine map searches, area reconnaissance, obtaining water samples, reviewing water analysis data, preparing conceptual designs and associated costs and preparation of summary report.

Sewer Lines and WWTPs

Washington County Industrial Development Agency – Design of a holding tank and ventilation system vault near Houston, Pennsylvania.

West Virginia American Water Company – Principal-in-Charge for evaluation of wastewater collections systems and treatment plants for two municipalities (Oak Hill and White Sulphur Springs) in West Virginia. Included were site visits to observe system, discussions with system operators and regulatory officials, records review, compilation of DMR data and issuance of findings in reports.

Geotechnical

Subsurface exploration, evaluation, and design of remedial measure for landslides:

- Soldier beam and lagging retaining walls
- Gabion walls
- Grade/drain/compact in-place
- Geo-grid reinforcement with grade/drain/compact in-place

Plasma Processing Corporation – Management of subsurface exploration and preparation of soils report near Ravenswood, West Virginia.

West Virginia University – Principal-in-Charge for the following projects:

- WVU Intermodal Parking Garage on the Medical Center Campus – geotechnical and civil engineering
- WVU Engineering Building – geotechnical evaluation

Principal-in-Charge for Williamson Landslide Project involving an abandoned mine land site. Geotechnical exploration and design of 480-foot long soldier beam and lagging retaining wall with tiebacks to support loose mine spoil backfill along the edge of a previously mined area with steep terrain. Project was required to protect an existing 125-bed nursing home facility.

Landfills/Solid Waste/Waste Disposal

Design and permitting of new landfills and development of cell closure plans:

Municipal Landfills –

- West Virginia Solid Waste Management Board/Monongalia County Sanitary Landfill – Morgantown, WV
- North Folk Landfill – Wheeling, West Virginia
- Disposal Service, Inc. Landfill – Hurricane, WV
- Sycamore Landfill, Inc. – Hurricane, WV
- City of Charleston Landfill – Charleston, WV
- Mingo County Landfill – Mingo County, WV
- Omar Landfill – Omar, WV
- Pocahontas County Landfill – Marlinton, WV
- HAM Sanitary Landfill – Peterstown, WV
- Kanawha- Western Landfill – Cross Lanes, WV
- S&S Landfill – West Milford, WV
- Brooke County Landfill – Brooke County, WV
- Wetzel County Landfill – Wetzel County, WV
- WVDEP's Landfill Closure Assistance Program
  - Montgomery Sanitary Landfill – Montgomery, WV
  - Wyoming County Sanitary Landfill – Pineville, WV
  - Jackson County Sanitary Landfill – Ripley, WV
  - City of Moundsville Landfill – Charleston, WV

Industrial Solid Waste (Fly Ash, Bottom Ash, Scrubber Sludge) –

- Mobay Hazardous Waste Landfill – Natrium, WV
- American Cyanamid (4 projects) – Willow Island, WV
- Client confidential – Parkersburg, WV
- Monsanto Company (multiple projects) – Nitro, WV
- Harrison Power Station – Haywood, WV
- Fort Martin Power Station – Morgantown, WV
- Mount Storm Power Station – Mount Storm, WV
- Keystone Power Station – Elderton, PA
- New Castle Power Station – New Castle, PA
- Conemaugh Power Station – New Florence, PA
- Alcoa Corporation – Newsburg, IN
- Portsmouth Power Station – Portsmouth, VA
- F.B. Culley Power Station – Newburgh, IN
- Hatfield Power Station – Masontown, PA
- Armstrong Power Station – Armstrong County, PA
- Cheswick Power Station – Springdale, PA

Design, permitting, economic analyses, and preparation of construction bid documents for coal ash/refuse sites including HDPE and PVC liner systems:

- Virginia Electric and Power Company
  - Portsmouth Power Station ash pond to dry fill conversion project
  - Mount Storm Interim Ash Site
- Pennsylvania Electric Company
  - Keystone Coal Ash/Coal Refuse Site
- Allegheny Power Station
  - Hatfield Ash Site

WVDEP Office of Waste Management – Development construction drawings, technical specifications, contractor's bid sheet and engineer's cost estimate for closure of Montgomery Sanitary Landfill. Work included leachate collection system, cap and double walled leachate tank.

WVDEP Office of Waste Management – Development of construction drawings, technical specifications, contractor's bid sheet, and engineer's cost estimate for final closure of the Wyoming County Landfill. Work included site assessment, double walled leachate tank, pump station, and connection of leachate line to Center Public Service District sanitary sewer.

WVDEP Office of Waste Management – Development of interim closure plans including leachate collection system, adequacy of groundwater monitoring wells and soil cover for the Jackson County Landfill and the City of Moundsville Landfill.

WV Solid Waste Management Board's Monongalia County Sanitary Landfill – Management of three liner expansions, borrow area determination, minor permit modifications, 1.6 MG double-lined leachate pond design, construction monitoring, and investigation of future alternatives.

Disposal Services, Inc. – Evaluation of landfill expansion and leachate minimization. Preparation of permit application for Phase I Cell 3 and Phase II including drawings, specifications, and CQA manual. Preparation of construction drawings for Phase I Cell 3 Stage I and management of construction monitoring. Preparation of erosion and sedimentation control plan, soldier beam and lagging retaining wall, gabion basket retaining wall, and assistance on FERC permit to relocate gas line in Hurricane, West Virginia.

S&S Landfill – Preparation of Landfill Expansion Revisions, permit revisions, and permit negotiation. Detailed review of hydrogeology and groundwater flow regime. Management of QA/QC for landfill expansion including clay/synthetic liner system, double walled leachate tank, sedimentation pond, drainage channels, and associated facilities in Harrison County, West Virginia.

Pocahontas County Solid Waste Authority – Management of miscellaneous services including preliminary closure plan, evaluation of leachate treatment alternatives, repair of tear in synthetic liner, preparation of annual reports, and surveying for Pocahontas County Landfill in Marlinton, West Virginia.

Kanawha County Solid Waste Authority – Investigation of potential landfill fire at Kanawha Western Landfill. Detailed geologic and hydrologic studies, monitoring well installation, and preparation of associated sections of landfill permits.

- North Fork Landfill – Wheeling, WV
- Sycamore Landfill – Hurricane, WV

Rhone-Poulenc Ag Company – Management of non-hazardous industrial landfill design project involving design report, technical specifications, construction drawings, QA/QC manual, operation manual, permit application, and environmental assessment. Included meetings with EPA Region 3 and WV Division of Natural Resources. Also three site selection studies. Complete geologic and hydrogeologic investigations including installation of monitoring wells.

Tennessee Valley Authority – Economic analyses of wet versus dry disposal processes, including conveyor belts, trucks, and sluicing by pipe for fly ash and bottom ash.
Pennsylvania Electric Company – Evaluation of natural and synthetic liner systems for coal ash/coal refuse sites. Preparation of permit applications for the New Castle ash site and Mitchell scrubber sludge disposal site:

- Pennsylvania Power Company
- Allegheny Power System

Coordinator of the compilation of data for a RCRA Part B permit application for a hazardous waste transfer facility in Parkersburg, West Virginia including SPCC plan.

Sludge sampling programs at the Institute, West Virginia plant of Union Carbide Corporation and the Tri-State Terminal of Ashland Petroleum Company.

Siting studies, including environmental impacts and economic analyses, for industrial waste and coal ash/refuse sites:

- Peabody Coal Company – slurry impoundment
- Rhone Poulenc Ag Company – 3 sites for industrial landfill
- Virginia Electric and Power Company – Mt. Storm Power Station
- Southern Indiana Gas and Electric Company – 4 sites at F.B. Culley Station
- Aloca Generating Corporation – 7 sites at Warrick Station

American Cyanamid Company – Management of QA/QC monitoring program for the first RCRA industrial waste impoundment in EPA Region 3. Composite liner system consisted of 3-foot soil-bentonite liner and two 60-mil HDPE synthetic liners separated by HDPE drainage net. Provided on-site testing laboratory. Daily and weekly project reports were provided. Prepared summary report and necessary "certifications" for submittal to WV Division of Natural Resources and EPA in Willow Island, West Virginia.

American Cyanamid Company – Management of QA/QC monitoring program for a stormwater retention basin consisting of 3' soil bentonite liner with concrete overlay. Daily, weekly, and project summary reports were prepared in Willow Island, West Virginia.

American Cyanamid Company – Preparation of plans, specifications, and permit application for the closure of an industrial waste disposal site. The capping system included geogrid to assist in supporting the overlying HDPE liner and soil cap in Willow Island, West Virginia.
Electric Power Research Institute – Preparation of the Coal Ash Disposal Manual and various manuals for the High Volume/Low Technology Fly Ash Utilization Program.
Electric Power Research Institute – Development of a computer program that provides a detailed cost estimate for a coal ash disposal area.

Rhone Poulenc Ag Company – Evaluation of settling characteristics for an emergency fly ash disposal pond and design of associated modifications at a plant in Institute, West Virginia.

American Cyanamid Company – Management of QA/QC monitoring for a closure of a 3-acre hazardous waste disposal area with sludge stabilization and an HDPE cap. Provided an on-site testing laboratory, daily and weekly project reports, a summary report, and agency required certifications in Willow Island, West Virginia.

American Cyanamid Company – Management of QA/QC monitoring for the stabilization and capping of 10-acre hazardous waste equalization basin in Willow Island, West Virginia.

Rhone Poulenc Ag Company – Sampling/sounding of two basins containing sludge from secondary biological treatment of industrial wastewater and subsequent determination of sludge quantities.

Development of alternative truck transportation cost schemes:

- Industrial and Hazardous Waste Management Study – Allegheny County, PA
- Holcomb, KA Power Station – Sunflower Electric Cooperative
- Portsmouth Station remote ash structural fill – Virginia Electric and Power Company

Roadway Design

Principal-in-Charge for design of new entrance roadway to the University of Charleston and the utility extension, surveying, and general civil engineering for a 440-bed dormitory. Project was a design/build.

West Virginia Divisions of Highways – Inspection of bridge and highway construction.
Managed numerous industrial access roads. Roadways were designed for the private sector. Design was coordinated with and approved by the West Virginia Division of Highways and roadways were accepted into the state transportation system.

- Relocation of State Route 80 for construction of new elementary and high schools at Bradshaw in McDowell County, WV – ZMM Architects
- Industrial park access road and County Route upgrade in Kenna, WV – Jackson County Development Authority and Double C Enterprises
- National Industrial Lumber access road in Amma, WV – Roane County Economic Development Authority
- Tucker County Industrial Park access road in Davis, WV – Tucker County Development Authority

- Luigino's access road in Parkersburg, WV – Wood County Development Authority
- Design of new entrance road to University of Charleston and redesign of MacCorkle Avenue (State Route 61) intersection/turn lanes in Charleston, WV – University of Charleston
- Entrance road, bus loop, and emergency exit roadway for new Sissonville Middle School in Sissonville, WV – N-Visions Architects
- Entrance road and bus loop for Trap Hill Middle School in Raleigh County, WV

WV Division of Highways – Managed environmental permitting, surveying, and design of four-lane 1.25-mile North Bridgeport Connector Road from Interstate 79 Jerry Dove Interchange to Benedum Airport in Bridgeport, West Virginia.

WV Division of Highways under open-end agreements for:

- Landslides and slope stability projects
- Surveying
- Asbestos services

WV Division of Highways – Managed geotechnical, environmental, right-of-way, and survey work performed as a subconsultant for various projects.

- King Coal Highway (section near Pineville, WV)
- Sharon Heights Connector
- Eldora and Enterprise Connector
- Dundon Bridge
- Martha Truss Bridge
- Martha Concrete Girder Bridge
- Upgrade of three bridges on Interstate 81
- Corridor H (section near Kerns, WV)
- Corridor D (section near Washington, WV)

Mining

Peabody Coal Company – Evaluation of potential stream flow attributed to long-wall deep mining subsidence in minimal overburden areas in southern West Virginia. Responsibilities included the review of mine maps, stream reconnaissance studies, and the establishment of three in-stream V-notch weirs. The weirs were monitored and maintained during a seasonal study period to generate direct flow measurements. The WVDEP also prepared a study for the site that was reviewed and comments prepared for the results.

Principal-in-Charge on numerous Independent Third Party Audits at sites for various coal producers. Independent Third Party Reviews of mines/complexes were undertaken with a thorough review to assess compliance of the operation to various federal statues and equivalent to state laws. Specific areas of review included are generally determined by the needs of the client or the requirements of governmental agencies and have included an assessment of the client's compliance with the following:

- Clean Air Act
- Clean Water Act
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Toxic Substance Control Act
- Comprehensive Environmental Response, Compensation and Liability Act
- Emergency Planning and Community Right to Know Act
- Federal Insectide, Fungicide and Rodenticide Act
- Oil Pollution Act
- Mine Safety and Health Administration
- Surface Mining and Reclamation Act
- National Pollution Discharge Elimination System
- Others as required

Development of reclamation plans for over 70 projects including landslides, mine fires, acid mine drainage, mine subsidence, refuse piles, water supply systems, and asbestos abatement. Projects were completed for West Virginia Division of Energy, West Virginia Division of Environmental Protection, Virginia Abandoned Mine Lands, and Ohio Department of Natural Resources and include the following:

- Duncan Hill Subsidence
- Beckley Subsidence
- Jonben (Haga) Subsidence
- Holden (Padgett) Subsidence
- Gray and Iaquinta Subsidence
- St. John's Road Subsidence
- Route 19/28 Subsidence
- Mt. Hope Subsidence
- Huffman Street Subsidence
- Morgantown Airport Drainage/Subsidence
- Fairmont East Subsidence
- Fairmont IV Subsidence
- Cheyenne Sales Company Reclamation
- Little Whitestick Refuse

- Crany Mine Dump
- Morgan Mine Fire
- MacArthur Phase 2 Subsidence
- Lake Lynn Complex
- MacArthur Mine Subsidence
- East Lynn II
- Flipping Hollow Complex
- Sundial (Hatfield) Refuse Piles
- Mill Creek Refuse Pile
- John's Branch Coal Refuse Dam
- Jessop Highway #10
- Lando (Edwards) Drainage
- Taylorville (Cantrell) Drainage
- Borderland (Matney) Portals
- Peach Ridge Complex
- Measle Fork Refuse
- Georges Creek Portals
- Putney Impoundment
- Kopperston (John's Branch) Refuse Emergency
- Marmet (Wells Drive) Landslide Emergency
- Marmet (Clark) Drainage
- Pringle Run #2
- Mountain Run Refuse and Portals
- Fairmont East Mine Drainage
- May Portal (Virginia Abandoned Mine Lands)
- Williamson (Hatfield) Landslide
- Georges Creek (Lucas) Rockslide
- Rachel Refuse
- Grass Run Refuse
- Allen Sheridan Hazardous Facility (asbestos)
- Elk City- Century- Volga Phase I/II Water Study
- Camp Mohonegan Regrade
- Comfort Run Coal Company (asbestos)
- Allen AMD
- Cora Mine Drainage No. II
- Covey Creek Mine Fire
- Vivian Refuse Pile
- Summerlee Refuse Pile (won 1996 southern reclamation award)
- Kimball Refuse Pile (won 1995 southern reclamation award)
- Hampden (Smith) Landslide
- Bear Run Refuse (won 1994 Ducks Unlimited award)
- Charleston (Ratcliffe) Landslide
- Garrison Complex
- Mulberry Fork (Stover) Landslide
- Courtright Highwall
- Belle Landslide
- Minden Drilling
- Kitchen/Gibson Landslide
- High Coal Tipple
- Omar Refuse Pile (won reclamation of the year award)
- Logan Drainage
- Switzer Adams/Robinson Drainage
- Follansbee Drainage
- Hawkins AMD
- Vargo Drainage
- Duck Creek Landslide
- Kistler Mine Fire
- Turner Douglas Complex
- Buffalo Creek No. 5 Refuse
- Dawmont Mine Facility
- Helen (Lewis) Refuse
- Upshur 10/15 Drainage
- Webster County Water Studies
- Iaeger Water Feasibility Study
- Burnwell, Standard, and Collinsdale Water Line Extension
- Clay-Roane PSD Water Feasibility Study
- Burnsville PSD Water Feasibility Study
- Brandonville/Pisgah Water Feasibility Study
- Cuzzart/4-H Water Feasibility Study
- Hudson/Mt. Nebo Water Feasibility Study
- Phase I Water Studies Brooke and Fayette Counties
  - Gauley River PSD – Belva
  - Hammond PSD – Wellsburg
  - New Haven Chamber of Commerce – Hico
- Mill Creek Regional Water Project Phase II Water Study (Boone, Lincoln, and Logan Counties)
- Godby Branch Phase II Water Study
- Madison Street Portals/Fairview Route 218 Portals
- Putnam County Phase I Water Studies
  - Heizer Creek
  - Manila Creek
- Boone County Phase I Water Studies
  - Jeffrey Area – Jeffery, Hewett Creek, Seacoal
  - Ottawa Area – Ottawa, Greenview, Missouri Fork, Meadow Fork, Aleshire Branch, Dent Fork, Mike's Fork
- Phase II Water Feasibility Studies
  - Logan County – Cow Creek, Crooked Creek, Upper Rum Creek
- Phase I Water Studies for Logan County
  - Pecks Mill – Godby Heights Communities
  - Cow Creek – Sarah Ann – Crystal Blocks Communities
  - Upper Rum Creek Community
  - Clothier Community
  - Crooked Creek Community
  - Godby Branch
  - Whitman Creek – Holden Project
- Beaver Creek Waterline Extension: Phase II Water Project

- Cassity Fork Water Supply Extension: Phase II Water Project

Subsurface explorations, subsidence monitoring, review of a coal reserve analysis, site plans, preblast/presubsidence surveys, hydrologic analyses, preparation of mining permits, and design and permitting of coal slurry impoundments for coal mining companies in West Virginia, Virginia, Kentucky, Ohio, and Maryland.

- Peabody Coal Company
- Eastern Associated Coal Company
- Southern Ohio Coal Company
- Island Creek Corporation
- Massey Coal Services
- Appalachian Mining, Inc.
- Oneida Coal Company
- Old Ben Coal Company
- Mettiki Coal Company
- Shafer Brothers Coal Co.
- LP Minerals

Management of fly ash utilization permits for various coal companies:

- Rawl Sales, Inc.
- Elk Run Coal Company
- Appalachian Mining, Inc.
- Peerless Eagle Coal Company

Managed subsurface investigation, foundation design, and development of mine stabilization program for NASA's Independent Verification and Validation Center in Fairmont, West Virginia.

Monongahela Power Company – Development of fly ash flowable fill specification for submittal to WV Division of Highways in Fairmont, West Virginia.

Computer modeling of groundwater movement of contaminants resulting from underground coal gasification.

NPDES Industrial/Municipal Permitting

Completed National Pollutant Discharge Elimination System (NPDES) renewal permitting and associated agency negotiations for several facilities.

Plasma Processing Corporation – Management of numerous projects in Ravenswood, West Virginia including:

- Subsurface exploration and preparation of soils report
- NPDES Permit
- Development of sampling program for Plasma to follow in obtaining samples for NPDES Stormwater Analyses
- Development of hazardous waste operations manual
- Acquisition of WV Air Pollution Commission permits
- Environmental audit of facility operations

Hydrology and Hydraulics

City of Charleston – Hydrologic and hydraulic analyses of South Ruffner Watershed. Project analyzed various storm events and presented conceptual recommendations to reduce effects of these storms.

U.S. Army Corps of Engineers, Jacksonville District – Determination of watershed areas along the Suwannee River Basin.

Groundwater

Dilley's Mill – Principal-in-Charge for review of regional groundwater information for a summer Boy Scout camp facility to locate and construct a replacement drinking water well for the facility. Responsibilities included the development and review of existing facility usage, determination of the location and depth of the proposed water well and design of the well to meet with the requirements of the State of West Virginia Department of Health standards. Design of sewage collection system and synthetic lined sewage treatment lagoon including permitting.
Groundwater sampling programs:

- Herr's Island – Urban Redevelopment Authority of Pittsburgh
- Robertshaw Controls in New Stanton, PA
- New Castle Power Station
- Pennsylvania Power Company
- Portsmouth Power Station
- Virginia Electric and Power Company
- Rhone Poulenc Ag Company – Institute, WV

Management of pump tests:

- Peabody Coal Company – Bim, WV
- Southern Ohio Coal Company – Meigs County, OH
- Rhone-Poulenc Ag Company – Institute, WV

Rhone Poulenc Ag Company – Development of specification manual for conducting soil and groundwater sampling programs. Manual detailed decontamination methods and proper handling/disposal methods in Institute, West Virginia.

Environmental Assessments/Impact Statements

Management of numerous environmental assessments for property transactions:

- Arch Coal – Multiple WV Tracts ESA (60,500 acres)
- Massey Coal Services – Red Cedar Surface Mine (850 acres)
- Duke Energy – Chicopee Environmental Audit (6,000 acres)
- Pittston Coal Management Group – Phase I ESA (6,000 acres)
- Massey Coal Co. – Hampton Site, Spruce Laurel (130 acres)
- Eastern Associated/Peabody Coal – Phase I ESA (1,035 acres)
- Eastern Associated Coal – Environmental Due Diligence for Active and Closed Operations in KY and WV (100,000 acres)
- Peabody Coal – Multi-state Environmental Audit in WY, CO, NM, AZ, Western KY, IN, IL (250,000+ acres)
- Peabody Coal – Environmental Due Diligence for Properties in IL and IN (150,000+ acres)
- AMVEST Mineral Services – Phase I ESA (8,000 acres)
- Peabody Energy Corp. – Phase I ESA on Putnam Property (1,036 acres)
- Arch Coal – Environmental Compliance Audit in KY, WV, and VA (150,000+ acres)
- Massey – Consolidated Coal Co. Holden Complex (5,500 acres)
- Massey – Environmental/Reclamation Liability Assessment for Northland Resources (150 acres)
- Peabody Coal – Phase I ESA for Imperial Coal and Turner Properties (5,400 acres)
- Peabody Group – Environmental/Reclamation Liabilities for Kanawha Eagle, LLC Permits in Boone and Kanawha Counties, WV (350 acres)

Principal-in-charge for the Coalfields Industrial Site Survey performed for the West Virginia Development Office. Study identified and evaluated more than 1,000 former and current mining sites for use as industrial sites. McDowell County was one of six included in the study. The study considered accessibility, utility status and distance of required extensions, topography, site size, and etc.

West Virginia Division of Highways – Coordination of Environmental Impact Statement for Route 19 upgrade from Summersville to Interstate 79 in Braxton County and New River Parkway from Sandstone Falls on I-64 to near Athens on I-77.

D. Mark Kiser, P.E., L.R.S.

Chief Engineer, Licensed Remediation Specialist

EDUCATION

B.S. Civil Engineering, 1984
West Virginia University

EMPLOYMENT HISTORY

1997-Present	Potesta & Associates, Inc.
1995-1997	Terradon Corporation
1984-1995	GAI Consultants

PROFESSIONAL REGISTRATION

Professional Engineer – West Virginia, South Carolina
Licensed Remediation Specialist – West Virginia

PROFESSIONAL CERTIFICATION

Hazardous Waste Site Operations and Superfund

Worker Protection Training, 40-Hour Training

Supervisory Training and Annual Refreshers

Troxler Nuclear Densometer Certification

SERVICE ON BOARDS AND COMMISSIONS

Commissioner – Sissonville Public Service District

AREAS OF SPECIALIZATION

Environmental assessments, environmental sampling and remedial programs, conceptual and final designs for chemical, utility, and municipal solid waste disposal sites, including liner systems, leachate management systems, stormwater management systems, operational plans and capping/closure systems, abandoned mine land reclamation projects, sludge stabilization and basin/pond closure projects, environmental permitting, hydrologic and hydraulic analyses, quality assurance/quality control monitoring.

PROFESSIONAL EXPERIENCE

Civil/ Site Design

Ridgeline, Inc./Cabela's – Retained by developer and Cabela's to provide civil engineering design services for a new Cabela's store in Charleston, West Virginia.

- ALTA survey
- Subsurface exploration
- Grading plan including balanced cut and fill for the building pad, parking fields, and access roads.
- Stormwater collection system design including curb inlets, catch basins, and culverts.
- Pavement design.
- Utility extension designs including sanitary sewer, potable water, fire service, natural gas, underground electric, underground telephone, and underground cable television.
- Permitting services
- Support for local approvals including approval from Charleston Municipal Planning Commission as a Development of Significant Impact, and building permit to allow construction to begin.
- MM-109 permit to allow for connection of the store's new roadway with the existing public roadway.

City of Charleston – Feasibility study for the replacement of the CSX Ramp in Charleston, West Virginia.

Villages at Coolfont – Project manager for project in Morgan County, West Virginia, which included planning, engineering, and permitting associated with developing a second home community on 1.000 acres near Berkeley Springs, West Virginia. Project included:

- Potable water supply source (wells), treatment plant, storage and distribution system
- 0.44 MGD MBR wastewater treatment plant and sanitary sewer collection system
- Community roadways and storm sewer systems
- Detailed plans for the water and wastewater treatment plants and the distribution allocation system serving the first 124 homes
- Permits were obtained for the water and wastewater plants

Project engineer for development of Suncrest Subdivision in Charleston, West Virginia. Project included engineering and permitting for a new residential subdivision including roadway, underground electric, telephone, cable, water, sanitary sewer and storm water. Sanitary sewer system was designed, constructed, and monitored under the terms of an alternate mainline extension agreement with the Charleston Sanitary Board.

Business and Industrial Development Corporation – Preparation of Utility Extension and Roadway Paving Plans for Southridge Centre - Phase 2 area. Project included preparation of bidding/construction drawings to provide natural gas, water, sanitary sewer, telephone, and cable television serving four commercial lots and a 50-lot proposed subdivision. All utilities were underground. The length of the project was approximately ½ mile. The project also included roadway paving and stormwater drainage.

Development of a conceptual development plan for a mixed use industrial park. The evaluation included developing preliminary alignments for two access roadways including earthwork requirements, drainage, subbase, and paving with preliminary cost estimates. Total length of road was over 5 miles. The evaluation also included preliminary layout of water and sewer service for a proposed 400-acre development.

Plasma Processing Corporation – Preparation of permit to construct and site development plan for a secondary aluminum processing facility startup in Jackson County, West Virginia.

Utility relocation plans required for site development, waterline, and sewer construction projects. Projects included determination of utility locations by records review, utility contacts, and surveying. Designs were prepared including locations, details, and pavement replacement. Design also included obtaining approvals from West Virginia Division of Highways and the owners of the utilities.

Abandoned Mine Lands

West Virginia Division of Environmental Protection Abandoned Mine Lands (WVDEP AML) Reclamation – Project engineer/project manager for open-end contract from 1988 through 1995. Responsible for conceptual design, permit applications, etc. for the following projects:

- Duncan Hill No. 1 and No. 2 Subsidence
- Urso Subsidence
- Jonben Subsidence
- Doug Gray Subsidence
- Turner Douglas Complex
- Omar Refuse Piles (project won reclamation of the year award)
- Bear Run Refuse (project won 1994 Ducks Unlimited award)
- Kimberly Refuse Pile (project won 1995 southern reclamation award)
- Vivian Refuse Pile
- Summerlee Refuse Pile
- Godby Branch Water Extension
- Williamson (Elias) Landslide
- Lefthand Fork Burning Refuse
- Belle Landslide
- Harris Acid Mine Drainage
- Numerous Phase I and Phase II Water Quality Studies/Survey

WVDEP-AML – Detailed design and preparation of construction drawings, specifications, contractor's bid sheet, and engineer's cost estimate for a half-mile water line extension to serve Beaver Creek near Junior in Randolph County.

WVDEP-AML – Management of four Phase II water studies and five Phase I water studies to determine if water supplies had been affected by coal mining. Work included resident interviews, mine map searches, area reconnaissance, obtaining water samples, reviewing water analysis data, preparing conceptual designs and associated costs and preparation of summary report.

Subsurface investigation, surveying coal refuse reprocessing evaluation and report, and design of reclamation plan to stabilize and approximately 15-acre refuse pile at Buffalo Creek No. 5 in Marion County,

West Virginia. Developed plans, specifications, cost estimate, and calculations brief for drainage control and regrading plan.
Subsurface investigation, surveying and design for reclamation of three coal refuse piles and six mine entries. Design included replacement of a water well and related supply piping for the Town of Kimball. Completed preparation of plans, specifications, cost estimate, coal refuse report, West Virginia Department of Health permit for new well, and other supporting documents for reclaiming this large site with over ½ million cubic yards of regrading.

Subsurface investigation, surveying, coal refuse reprocessing evaluation, water quality monitoring, and design of a reclamation plan for a coal refuse pile, unreclaimed highwalls, and slurry and water treatment ponds in Lewis County, West Virginia. Plans, specifications, cost estimates, and calculations brief were completed for the project.

Environmental Assessments/Impact Statements

Rhone-Poulenc AG Company – Management and oversight of environmental assessment to identify any liabilities or soil/water degradation for a proposed industrial solid waste landfill. Investigation included drilling, sampling, monitoring well sampling, site reconnaissance, and historic records research to establish baseline soils and groundwater conditions. Results presented in a report.

West Virginia Division of Highways – Environmental Assessment for a 1.25-mile proposed four-lane divided highway in Bridgeport, West Virginia.

West Virginia Division of Highways – Environmental Impact Statement (EIS) for proposed Route 19 upgrade from Summersville, West Virginia to Interstate 79 in Braxton County, West Virginia. Project included evaluation of three alternatives over approximately 25 mile length. Responsibilities included hazardous waste section collection of general data used by other scientists, field reviews, and public meeting participation.

Assessment of environmental and reclamation liabilities associated with over 40 surface mine permits in western Virginia. Evaluation included PCB concerns, reclamation costs, underground and aboveground storage tanks, and acid mine drainage.

Massey Coal Service, Inc. – Assessment of environmental liabilities associated with a large tract of property including over 25 permitted mines and a coal preparation plant. Investigation included a review of permits and requirements, past environmental compliance record, walkover of each site, and development of estimated reclamation costs for each site. Report prepared to document results of the liability assessment.

Completion of environmental assessments and a preliminary design report for two inactive commercial solid waste disposal landfills located in Kanawha and Wyoming County, West Virginia. The environmental assessment included completion of a groundwater user's survey for residents located within ½ mile of each facility, drilling shallow groundwater monitoring wells to monitor flow along the soil/bedrock interface downgradient of each landfill, an extensive geotechnical soils/rock investigation, assessment of each facilities compliance with the solid waste management rules, and developing recommendations for a preliminary closure plan.

Mining

Eastern Associated Coal Corporation – Coal ash utilization study including five mining operations and four coal ash sources in Virginia and West Virginia. Study evaluated both surface and underground beneficial uses of ash to neutralize acidic drainage.

Project manager/engineer for the preparation of coal ash utilization permits for West Virginia mining operations. Permits included placing ash in the embankment of refuse disposal sites and placing ash with spoil backfill.

- Elk Run Coal Company
- Appalachian Mining, Inc.
- Peerless Eagle Coal Company
- Rawl Sales and Processing Company

Pace Carbon Fuels, LLC. – Consulting and permitting for the development of seven coal-based synthetic fuel manufacturing plants in West Virginia, Indiana, Kentucky, and Illinois. Project included obtaining pre-construction and operating permits for air, water and mining for the manufacturing plants and the feedstock coal recovery operations. Assignments included permit application preparation, assistance in locating and evaluating coal feedstock sites, construction monitoring,

Phase 1 environmental site assessments, and other miscellaneous engineering consulting functions.

Pennsylvania Electric Company – Yearly construction designs for lined coal ash and coal refuse disposal sites at the Keystone and Conemaugh power stations, including a synthetic liner system, groundwater and surface-water control, leachate collection, landfill development, and haul road design. Construction quantity and cost estimates and development of IBM-PC software for evaluating the storage capacity of the disposal sites.

Landfills/Solid Waste/Waste Disposal

DuPont Washington Works – Project Manager responsible for design, preparation of construction documents, and construction documents, and construction quality assurance monitoring for a 6.2-acre expansion of a piggyback of a leachate collection system at an industrial waste landfill.

Eastern Environmental Services, Inc. – Project engineer/project manager for finalizing a permit application for the S&S Landfill near Clarksburg, West Virginia. Components of the plan included a detailed staging and closure plan to comply with sediment control and leachate storage requirements. Successfully represented the landfill in a permit appeal hearing before the Water Resources Board. Prepared two construction/bid packages for constructing the initial 10 acres of the landfill.

Cytec Industries – Quality assurance/quality control monitoring for closure of a 10-acre SWMU containing biological treatment sludge. The contents of the basin were stabilized by mechanical mixing. Activities included supervision of testing, data evaluation, and a revised interim grading and drainage plan. Report and certification provided for WVDEP-OWM.

Cytec Industries – Closure plan and permit application for closure of a 5-acre industrial waste landfill. Steep slopes over a portion of the landfill necessitated the design of an innovative cap system and leachate collection system. Project also included closure and capping of a small pit containing tar residue.

Responsible for detailed hydrogeologic investigation and preparation of a major portion of the WVDEP Part A Solid Waste Disposal Permit Application for the Northfork Landfill near Wheeling, West Virginia. Project included field reconnaissance and mapping of existing site conditions, rock corings, test pits, laboratory analysis of soils for potential construction materials, installation of four monitoring wells, and the corresponding analysis and evaluation of data for completing the Part A Application.

Responsible for hydrogeologic investigation and preparation of the WVDEP Part A Solid Waste Disposal Permit Application for the Sycamore Scenic Landfill in Putnam County, West Virginia. Work included coring, test pit, and laboratory analysis of soils; review of existing groundwater data; and analysis and evaluation of data for completing the Part A Application.

Project Manager responsible for construction quality assurance monitoring for three landfill expansions at Brooke County Sanitary Landfill, including 6.5 acres of composite liner.

Project Manager responsible for construction quality assurance monitoring for 0.8 acre composite liner expansion at Wetzel County Landfill.

Project Manager/Project Engineer for design of composite liner system expansion, design and construction quality assurance for a 2-acre final landfill cap, and design of a new access road serving Pocahontas County Landfill.

Chambers Development Company – Preparation of solid waste disposal permit applications for the Monroeville Landfill, Monroeville, Pennsylvania, and the Southern Alleghenies Landfill, Cambria County, Pennsylvania, both of which include a double synthetic liner system combined with a drainage net leak detection system to conform to Pennsylvania DER regulations.

Project manager/engineer for the West Virginia Division of Environmental Protection's landfill closure assistance program for 1997 through 2002. Responsible for conceptual design, field investigation, construction drawings, specifications, permit applications, etc., for the following projects:

- Wyoming County Landfill
- Jackson County Landfill
- Kanawha Western Landfill
- Monongalia County Sanitary Landfill
- Fayette County Landfill
- Fleming Sanitary Landfill

QA/QC monitoring oversight for a municipal waste landfill in Tazwell County, Virginia.

Design; preparation of drawings, technical specifications, and contract/bid documents; construction monitoring; air monitoring; sludge sampling and analysis; review and approval of a detailed health and safety plan; permitting; and other miscellaneous engineering services for the stabilization and closure of a 3-acre sludge basin and a 1-acre sludge pond. The project included management of a pilot-scale demonstration, procurement of stabilization reagents from multiple providers, and development of an adjacent soil borrow area.

Design; preparation of drawings, technical specifications, contractor's bid sheet, engineer's cost estimate, contract, and cap acceptability evaluation; evaluation of contractor bids, and construction monitoring associated with the capping and closure of a 2.5-acre cell of an industrial waste landfill facility. Cap included a multi-layer geocomposite system to minimize infiltration and the production and leachate to improve the areas groundwater quality.

Final design and preparation of construction drawings, detailed technical specifications, and engineer's construction cost estimate for the construction of a 1.9-million gallon double-lined pond and 5 acres of a landfill liner system. This project included development of an ultimate facility layout plan, a two year detailed development plan, and construction monitoring. Project also included negotiations with regulatory agency to obtain approval of the permit.

Response to regulatory agency review comments and redesign of a pond liner system and piggyback landfill liner system for a 20-acre landfill in West Virginia.

DuPont Environmental Remediation Services – Consulting regarding the design of a final cover/cap for an industrial waste landfill located in West Virginia.

West Virginia Public Service Commission – Site reconnaissance, development of alternative capping/closure systems, and preparation of engineer's cost estimates for the closure of two West Virginia municipal waste landfills in support of rate making testimony and hearings.

American Cyanamid Company – Project manager/engineer for independent quality assurance/quality control monitoring associated with closure of a three acre SWMU consisting of a waste impoundment. Project included construction of an earthen buttress to improve slope stability, in-place waste stabilization using fly ash and kiln dust, and construction of a RCRA cap. Responsible for field design revisions to overcome problems, conformance testing, and preparation of certifications and a summary report. Project included sampling and analysis of raw and stabilized sludge.

American Cyanamid Company – Coordination of field activities associated with construction monitoring and laboratory testing for RCRA hazardous waste impoundment (the first permitted and constructed in EPA Region III) in Willow Island, West Virginia, including earth moving, construction of a soil-bentonite liner, monitoring of three, sealed double-ring infiltrometers, and construction of an HDPE double-lined impoundment.

Pennsylvania Electric Company – Field (construction) monitoring for development of a residual waste landfill including compaction testing for heavy earth moving, synthetic (PVC) liner installation, concrete testing, and other miscellaneous testing.

Virginia Power Company – Consultant for site development and construction of a fly ash disposal facility including a review of site operations, developing a maintenance program, compaction testing and review, and problem shooting.

Rhone-Poulenc Ag Company – Design and permitting for a proposed industrial solid waste landfill. Project included complete hydrogeologic evaluation including several borings and installation of seven monitoring wells; documentation of soils, geology, water quality and hydrogeology; detailed site design of leachate ponds, liner system, storm water collection system, access road, and capping/closure system. Multi-volume permit application prepared including Operations Manual, Quality Assurance/Quality Control Plan, Technical Specifications, Permit Application, and Design Drawings.

Rhone-Poulenc Ag Company – Leachate Minimization Study for a RCRA Hazardous Waste Landfill. Project included assessment of existing landfill operation and recommendations to reduce quantity of contaminated runoff from over 8 million gallons per year (MGY) to between 2 and 3 MGY. Detailed staging and operating plan, storm water management plan, and cost estimates prepared.

American Cyanamid Company – Closure plan and permit application for closure of a three acre surface impoundment containing sludge and tar. Stability concerns for an existing embankment containing the waste lead to the development of a lightweight cap. Subsurface investigation and field surveying completed. Closure application as required by the West Virginia Division of Environmental Protection provided.

Soundings and sampling of three basins containing sludge. Two basins contained sludge from secondary biological treatment of industrial wastewater. One basin contained petroleum product sludges. Sludge quantities determined from soundings and cross sections prepared. Samples obtained for laboratory analysis to characterize wastes.

- Rhone-Poulenc Ag Company
- Ashland Petroleum Company

Monongalia County Sanitary Landfill – Engineer responsible for expansions, planning, and upgrades for the Monongalia County Sanitary Landfill from 1990 through 1992. Activities included:

- Three expansions (seven acres total) of the landfill liner and leachate collection system, including grading, groundwater collection drains, landfill liner system and leachate drains, protective cover, and surface drainage control
- Construction monitoring
- Certification of landfill expansions
- Construction of a 1.6 million gallon leachate storage basin, including clay liner, double synthetic liner, synthetic drainage layer, protective cover, and drainage control devices
- Annual landfill volume reports, including surveyed cross sections
- Two borrow area investigations to identify clay liner sources
- Feasibility study for expansion and continued operation of the facility
- Final closure plan for the facility including a multi-layered cap and drainage control plan

Rhone-Poulenc AG Company – Evaluation of an emergency fly ash pond for a chemical plant in Institute, West Virginia. Recommendations, including conceptual design drawings and an engineer's cost estimate, to increase the settling efficiency of the pond. Special design elements, including a polymer feed system, submerged manifold pipe, splitter dike, and an overflow weir.

Hampton-Clarke, Inc. – Project Manager for Independent Quality Assurance Testing (IQAT) services for removal of contaminated soils and placing clean soil backfill at the site of a former cullet pile disposal area.

Stormwater

Expert witness for plaintiff damaged as a result of flooding caused by lack of maintenance at a culvert system in Westoreland, Wayne County, West Virginia.

Stormwater drainage plans for site development projects including pre- and post- development discharges, design of sediment control devices, preparation of stormwater general permit application, and consulting for numerous construction projects in West Virginia.

Evaluation of stormwater drainage system (culverts and channels) to alleviate flooding problems for a church in Kanawha County, West Virginia. Project included computer modeling to identify culvert capacities and to identify repair options.

Expert retained to support a property owner damaged as a result of flooding caused by downstream obstructions. Reviewed regulatory agency files, conducted site inspections, evaluated possible remedial measures, and provided support in anticipation of litigation.

Expert witness for plaintiff damaged as a result of flooding from upstream construction. Visited site to observe problem areas, reviewed construction practices/procedures, reviewed regulatory permits, and provided testimony as to the cause of flooding.

Developed stormwater management plans, including calculation of peak runoff rates, storm volumes, and design of stormwater management devices including culverts, ditches, sumps, ponds, principal pipe spillways, and emergency spillways for the following projects:

- Site development projects including commercial, retail, and industrial sites ranging from ¼ acre to more than 100 acres.
- Abandoned mine lands reclamation projects, including landslides, refuse piles, slurry ponds, and subsidence control projects.
- Commercial and industrial waste landfill projects.

- Roadway design projects.
- Other projects involving the disturbance of the ground surface.

Water Lines, Water Storage Tanks, and Water Treatment Plants

WVDEP-AML – Detailed design and preparation of construction drawings, specifications, contractor's bid sheet, and engineer's cost estimate for six-mile water line extension including fire protection. Included in project were 90,000 gallon water tank, booster station, and pressure relief valves. Extension tied into Norton Harding Jimtown PSD System and served town of Cassity in Randolph County.

Design for waterline extension projects including preparation of construction drawings, specifications, and engineer's cost estimates for the West Virginia Division of Environmental Protection, Office of Abandoned Mine Lands and Reclamation.

- Cassity Fork Waterline
- Beaver Creek Waterline Extension
- Godby Branch Waterline Extension

Design, preparation of construction drawings, preparation of permit applications, and other related activities for the construction of waterline projects. Line sizes ranged from 16 inches to 2 inches. Materials of construction included polyvinyl chloride and ductile iron pipe. Drawings included planimetric maps, topographic maps, and aerial photograph formats to depict proposed construction. Permit applications included Bureau of Public Health, Public lands Corporation Stream Activity Permits, Division of Highways Occupancy Permits, and General Storm Water NPDES Construction.

- Cabell County 2000 Project, 23 miles of new waterline construction, West Virginia American Water Company (WVAWC)
- Poca River Road Waterline Extension, 13 miles of new waterline construction, WVAWC
- Route 60 Contract 3 Waterline Extension, 3 miles of new waterline construction, WVAWC
- Buff Creek/Trace Fork Waterline Extension, 6 miles of new waterline construction, WVAWC
- Route 60 Contract 4 Waterline Extension, 2 miles of new waterline construction, WVAWC
- Yorktowne Subdivision, 3,000 linear feet of waterline serving a 50-lot subdivision.

ESAs (Phase I and II)

Numerous Phase I Environmental Site Assessments including reclamation liability assessments for mining and industrial properties in West Virginia and Kentucky. Projects typically focused on solid waste disposal practices, potential acid mine drainage discharges, underground storage tank status, areas of hydrocarbon soil contamination, PCB transformer concerns, and other environmental liabilities.

Phase II environmental site assessment for an abandoned mining complex located in Fayette County, West Virginia. The new owners wished to identify any liabilities and determine approximate clean-up costs for negotiations with the previous owners. The areas evaluated included two aerial tram head houses, a drum storage area, truck maintenance garage, mine machinery repair shop, two commercial properties, a lamp house, and other storage areas. Numerous areas of petroleum hydrocarbon contamination were identified and the extent of contamination documented. An on-site laboratory was used to expedite testing and establishing the boundary of areas requiring remediation. The results of the investigation were summarized in a report, including a detailed description of sampling and laboratory analysis methods, drawings showing sample locations, laboratory results, estimated volumes of contaminated soils, and recommendations for cleanup.

West Virginia Regional Jail and Correctional Facility Authority – Phase I Environmental Site Assessment to document potential liability for a tract being considered for a regional jail site in Kanawha County, West Virginia. Activities included historic records search, interviews, site reconnaissance and preparation of a report documenting the findings.

DiMucci Development – Phase I Environmental Site Assessment for property proposed for development as a strip mall.

The Multicare Companies, Inc. – Completion of eight Phase I Environmental Site Assessments for nursing and rehabilitation care facilities in West Virginia.

Virginia Electric Power Company – Assistance with site design and engineer's construction cost estimate for the remedial design of a CERCLIS waste disposal facility.

Phase I environmental site assessments for feedstock recovery sites associated with three coal-based synthetic fuel manufacturing plants. The feedstock recovery sites included numerous coal waste slurry impoundments, dry refuse piles, and mixed refuse disposal areas. Assessments focused on potential acid mine drainage problems, former waste disposal areas, and other mining-related environmental liabilities. A report was prepared detailing the findings for each site.

Sewer Lines and WWTPs

Project manager/project engineer for the Fleming Landfill Sanitary Sewer Extension project in Kanawha County, West Virginia. Project included design, permitting, construction monitoring, and certification of 9,900 linear feet of gravity and force main sanitary sewer, a new duplex pump station, and rehabilitation/upgrade of an existing pump station. The construction contract was over $1 million. The completed sewer extension was turned over from the West Virginia Department of Environmental Protection to the Sissonville Public Service District for ownership and operations.

Project engineer for sanitary sewer system including 8 inch gravity sewer, pump station, and force main sewer serving the Gettysburg Subdivision in Charleston, West Virginia. Project included an alternate mainline extension agreement with Charleston Sanitary Board, construction monitoring, surveying, road design and subdivision plans.

Project manager/engineer for an industrial wastewater sewer extension. Project included design engineering, permitting, and construction monitoring associated with a 5 million gallon, double-lined storage impoundment, duplex pump station with 70 horsepower pumps, and 5,200 linear feet of force main sewer in Monongalia County, West Virginia.

Design, permitting and construction monitoring associated with a 138,000 gallon double containment storage tank, duplex pump station, and force main piping associated with closure of the Jackson County Sanitary Landfill near Ripley, West Virginia.

Stream/Wetland Delineation, Permitting, and Mitigation

Columbia Gas Transmission Corp – Design of stream stabilization and restoration plan for a section of East Fork of Queer Creek in Hocking County, Ohio. Project included obtaining 401/404 certification and preparation of a detailed construction plan.

MARK A. SANKOFF, P.E., P.S.

Chief Engineer

EDUCATION

B.S. Civil Engineering, 1982
West Virginia University

EMPLOYMENT HISTORY

2011-Present	Potesta & Associates, Inc.
1991-2011	West Virginia American Water
1988-1991	Dunn Engineers, Inc.
1982-1988	Kelley, Gidley, Blair & Wolfe, Inc.

PROFESSIONAL REGISTRATIONS

Professional Engineer – West Virginia
Professional Surveyor – West Virginia

PROFESSIONAL AFFILIATIONS

American Water Works Association
National Society of Professional Engineers

AREAS OF SPECIALIZATION

Water including design of water mains, water storage tanks, booster stations, pressure reducing stations, advanced metering infrastructure – (AMI) and Automated Meter Reading – (AMR) systems. Extensive knowledge in water distribution systems operation and maintenance.

PROFESSIONAL EXPERIENCE

Water Lines, Water Storage Tanks, and Water Treatment Plants

Responsible for engineering at West Virginia American Water (WVAW):

- Supervising an engineering staff of eight, working in conjunction with other departments at WVAW.
- Developing and prioritizing multiple capital projects while developing and managing the multi-million capital budget for West Virginia. Budgeting includes developing and creating large investment projects, multiple public private partnerships and several acquisitions.
- Involved in multiple operational issues/projects including non-revenue water reduction, comprehensive planning studies including interconnection studies to combine operations to increase efficiencies.
- Worked on the automation of Bluestone Water plant which is intended to be the first one shift automated and unattended surface water treatment plant in West Virginia.
- Design of multiple pressure reducing stations and booster stations.
- Overseeing a $1.5+ million per year tank painting program.
- Managed tank painting program, which included evaluating, prioritizing, draining and refilling tanks, tank inspections, preparation of contract documents, bidding, bid evaluations, contract awards, scheduling, taking tanks out of service while maintaining uninterrupted service to customers.
- Responsible for over 300 tanks in the largest water system in West Virginia.

Responsible for the Fayette AMI project, a $4.3 million dollar meter replacement/automation project to automate almost 12,000 water meters in Fayette County, West Virginia. This project was part of an EPA Green Project and the project was successfully publically bid using a performance specification using stimulus money. Methods were developed to economically work through terrain issues as it related to radio signals to develop a successful project. The project successfully incorporated acoustic listening devices to monitor the distribution system at night to reduce non-revenue water in the Fayette water system.

City of Glenville – Project Manager for the study, design, bidding, and construction phase services for project involving upgrades and construction monitoring to their existing potable treatment and water distribution system.

Town of Mills Creek – Project Manager for the design, permitting, preparation of construction plans, specs, and bidding documents, and construction administration/observation services for the construction of two backwash ponds behind the existing water treatment plant.

Responsible for the project management to complete the WVAW building complex at 1600 Pennsylvania Avenue, Charleston, West Virginia. Provided oversight of the building complex for all operation and maintenance items, as well as liaison with the leasees.

Project Manager of the Kanawha Valley to Montgomery Interconnection Project design which included over 20 miles of 20-inch to 12-inch water mains, two relay booster stations, one storage tank, Kanawha River Crossing, railroad crossings, two pressure reducing stations and radio telemetry.

Project Manager for the EPA IDSE disinfection project to develop the computer water models for the Charleston and Huntington water systems which calibrated the two largest water distribution systems in West Virginia.

Project Manager for the Kanawha County IDB Water Project 2000 which served 33 areas and brought water to over 1,740 families. The total project cost of over $22 million included over 100 miles of water mains, five boosters and six water storage tanks of various sizes. Oversaw the design work of six consultants, including acquiring the rights-of-way, the bidding of 12 water main contracts, and the construction of those contracts with five consultants handling five contractors, while managing the bidding and construction of the above boosters and water storage tanks.

Prepared specifications and plans for numerous water main extensions, water storage tanks, boosters and hydro pneumatic booster stations and pressure regulating stations including site work, other utilities, and property acquisition, including bidding, project and construction management.

Parcoal Project, Webster County, consisting of 8-inch water main extension and a 160,000-gallon water storage tank using an ARC Grant.

Southridge Development Project consisting of 16-inch water main extension to serve the Southridge Development on Corridor G.

Responsible for the 55-person department that maintained the Kanawha Valley water distribution system, which repaired an average of 1,500 main breaks per year up to 30-inch PCCP:

- Responsible for providing new water services – the department made an average of 850 taps per year
- Oversaw the leak survey effort to reduce unaccounted for water – developed a system to check night flow in systems using existing telemetry to determine leakage and direct efforts to maximize finding and fixing those leaks
- Coordinated the small diameter main replacement program which averaged over one million dollars per year
- Comprehensive supervisory experience between union and non-union personnel – responsible for five supervisors
- Assisted in union negotiations – developing a process to equalize overtime within the distribution department Worked with the Manager to develop 24-hour coverage shifts to provide better customer service and reduce O&M costs, including a 12-hour shift schedule using four foremen to provide round the clock coverage
- Served as the liaison with Kanawha County Commission and KCRDA on new water projects to serve un-served areas

Oversaw the completion of the construction of the Consolidated Office Complex for WVAW's corporate headquarters in Charleston in 1997 to 1999.

Kanawha County Water Main Extension Project consisting of waterlines, booster, a 200,000-gallon water storage tank, and four pressure-regulating stations for the Campbells Creek area of Kanawha Valley.

Quarry Creek Subdivision consisting of vertical turbine booster station and a 330,000-gallon water storage tank, with an elevated storage tank bid option and water lines.

Kellys Creek Project consisting of 16-inch water main extension, booster station, and water storage tank along Route 60 using WVDEP, AML funding.

Little Sandy, Aarons Fork and Edens Fork Projects. Construction of water mains, a booster station and a

160,000-gallon storage tank utilizing two Small Cities Block Grants with KCDRA.

Summers-Mercer Water Project included design of an 8-inch water main to Hinton and a 24-inch water main from the new Bluestone plant to Princeton, including the pressure reducing stations along with the 300,000-gallon water storage tank near Pipestem.

Designed and constructed multiple small water main extensions, working with developers, customers and small contractors to serve new subdivisions and unserved areas.

Sewer Lines and WWTPs

Project Manager for the replacement of the Wastewater Treatment Plant at Point Pleasant, West Virginia. This included being responsible for design, plans, specifications, regulatory approval, bidding and bond sale, and construction management.

Inspection of wastewater collection systems, writing Operation and Maintenance Manuals, Facility Plans, and Grant Applications for various clients.

Project Manager for the Big Sandy Sewer Public Service District Vacuum System Project, which included the design and construction of three vacuum sewer stations, two sewage pump stations, a 9-mile force main, and the vacuum sewer collection system. Responsibilities of the above involved the preparations of engineering contracts, planning reports, plans and specifications, bid documents, operation and maintenance manuals, and change orders for state and federally funded wastewater and water projects. The process involved cost-effective analysis, public relations, technical writing, and public speaking.

Project Engineer for the Logan Wastewater Interceptor Project, the Town of Barboursville Lagoon Improvements, and the Philippi Wastewater Project including a new Oxidation Ditch Plant, renovation of an existing pump station, sewer main replacement design, and construction. Experience included designing wastewater treatment plants, sludge handling facilities including belt filter presses, wastewater collectors and pumping systems, site developments, access roads, and combined sewer overflow (CSO) facilities.

JARRETT M. SMITH, P.E.

Senior Engineer

EDUCATION

B.S. Civil Engineering, 2002
West Virginia University Institute of Technology

A.S. General Science, 2000
West Virginia University

EMPLOYMENT HISTORY

2003-Present	Potesta & Associates, Inc.
2001-2002	WV Dept of Transportation District 3-Design/Field Inspector

PROFESSIONAL REGISTRATIONS

Professional Engineer – West Virginia

SERVICE ON BOARDS AND COMMISSIONS

WV Society of Professional Engineers Board Member

AREAS OF SPECIALIZATION

Management and oversight of civil engineering projects with services related to the surveying, geotechnical exploration, planning, design, permitting, and construction monitoring. Projects categories include oil and gas pipeline permitting, oil and gas well pads, residential, commercial, and industrial development, stormwater management facilities, and solid waste landfills.

Project responsibilities include civil site design, hydrologic and hydraulic design, grading plans, water line plans, sewer line plans, roadway layout, utility design, development of technical specifications, preliminary cost estimates, schedule and budget tracking.

PROFESSIONAL EXPERIENCE

Civil/Site Design

Development of grading plans, cut/fill analysis, utility design/layout, engineer's cost estimates, preparation of permit applications, consulting with clients, architects, regulatory agencies, and municipalities. Detailed design, preparation of construction drawings, technical specifications, cost estimate, contractor's bid documents, review and recommendation of contractor's bids, and review of shop drawings.

- West Virginia Water Development Authority Office
- Pison Development – 10 apartment complex projects
- Double C Enterprise – Kenna Ridge Business Park
- Tricor Development – Hurricane Market Place Parcels A and B
- Green Eagle Development – four residential site development projects
- Ervin Development – Woodstock commercial site development project
- MDG Development – Oakland subdivision
- Tucker County Industrial Park – water and sewer line expansion
- ZMM – Bradshaw High School project
- Dunlap Builders – West Run Student Housing
- Allegheny Energy Supply's Fort Martin Power Station – fly ash landfill expansion project

Flood Studies/Stormwater Management

Floodplain Management – Tasks included development of hydraulic modeling of watersheds for existing and proposed conditions using HEC-RAS and HEC-HMS to determine flood levels and the impact on the properties of local residents, oversight of surveying and mapping development. Project's scope included fill within the Special Flood Hazard Areas (SFHA), residential and commercial development within SFHA, obtaining the original computer model of floodplain data from the United States Army Corps of Engineers (USACE), and coordination with local floodplain manager, FEMA, and USACE. Preparation of permit application packages for

FEMA's LOMA, CLOMR-F, and LOMR application submittals.

- Pison Development – Mineral Manor, Knollview Village Apartments, Willow Tree Apartments, Crestview Apartments
- Copper Beech – townhouse development project
- Jo's Globe Distribution – expansion project
- Blue Ridge Builders – Cheat Landing Development
- Hamlin United Methodist Church – Revised Floodway project
- Columbia Pipeline Group – Clendenin Low Water Crossing

Stormwater Management Design – Tasks include hydrological analysis, hydraulic evaluations of open and closed channel flow systems, storm sewer design, velocity dissipation analysis and design, stormwater retention/detention design, water quality analysis and design, and sediment control structure design. Programs utilized during projects included Haestad Method Programs and SedCad Software.

- Echo, Inc. – Tupper's Creek site development
- Pison Development – six projects
- Kenna Ridge Business Park
- Hurricane Market Place
- Woodstock – commercial site development
- Green Eagle – three projects
- O-N Mineral – process pond
- RJ Recycling, LLC – Riverside Yard sediment/oil control ponds
- Dunlap Builders, Inc. – West Run Student Housing project

Sewer Lines/WWTPs

Sewer/water distribution and collection system design and upgrades – Tasks included hydraulic calculations, storage tank sizing, pump station design, layout and selection of water/sewer line extensions, preparation of design drawings, specifications, and engineer's cost estimates.

- Tucker County Industrial Park
- City of Philippi, Barbour County
- ZMM – Bradshaw High School project
- Boone County PSD – Tic Toc Tire Sewer

Oil and Gas

Project manager over numerous production and gathering line projects amongst various clients that include development of well pad layout and design, alignment sheets, floodplain analysis evaluations and permitting preparations, stormwater design, bridge design, geotechnical exploration and recommendations, and cost estimates. Each completed project includes understanding of local, county, and state regulations, and coordination with the various agencies.

NPDES Industrial/Municipal Permitting

Project Manager for Armstrong Mineral Wool Plant project in Millwood, West Virginia. Project required obtainment of NPDES Construction Stormwater Permit, NPDES Industrial Permit, Evaluation of POTW discharge, Pretreatment Permit, 401/404 permitting, bi-monthly stormwater management verification, SPCC Plan, Direct Discharge NPDES requiring background water sampling. Also included bi-weekly scheduling and budget updates to the Armstrong Team.

Development of NPDES Construction Stormwater Permits for any site larges than one acre in size including preparations of permit application, Stormwater Pollution Prevention Plans, and Erosion and Sediment Control Plans.

Spill Prevention, Control & Countermeasure Plans

Project Manager for WV Paving Company for the development of SPCC Plans for 19 existing facilities. Tasks included organization and oversight of field crews, review of field data. Review of draft plans. Certification of final SPCC Plans, along with budget and schedule tracking and updates.

ESAs (Phase I and II)

Environmental site assessments, including record searches and field investigations for numerous sites in West Virginia. Specialization in large acreage tracts, including coal properties. Typical acreages have ranged from 1,000 to 65,000 acres, and include assessment of acid mine drainage and properties including mine portals, mine shops, and coal preparation plants.

- 17,500-Acre mining property in Fayette County, WV
- 43,000-Acre mining property in Kanawha/Clay Counties, WV

Hazardous Waste/RCRA/Corrective Action

Typical scope of work of projects included the development of detailed site specific quality assurance/quality control plans, health and safety plans, and review of analytical data.

Created digital mapping with Arcview GIS 3.2a™ software and created contour/concentration maps using Surfer 8.0™ software for use in evaluation and remediation purposes for a RCRA Corrective Action site located along the Kanawha River.

Supervisor and operator of Earthsoft's EQUIS database projects. Managed large amounts of analytical data related to a RCRA Corrective Action Facility, utilizing Earthsoft's Environmental Quality Information Systems (EquIS). Tasks included coordination amount various laboratories on the format and quality of the electronic data deliverables (EDDs) received. Importing and merging of received EDDs for use in warehousing and qualifying analytical data within EquIS Chemistry™ for site assessments, risk assessments, site characterization, and remediation projects. Performed data review and validation in accordance to quantifiable sections of the EPA Functional Guidelines and CLP programs using EarthSoft's Data Qualification Module™ (DQM). Managed environmental geology data and created geologic cross-sections, contours, solid modeling, boring logs, and reports using EquIS Geology™ RockWorks99™, and logPlot98™, and Surfer 8.0™. Presented multi-data crosstab reports using EquIS CrossTab Report Writer interface. Built multiple layer maps, contaminant maps, and query-specific analytical data presentation through EquIS Arcview Interface.

PATRICK A. TAYLOR, P.E.

Senior Engineer

EDUCATION

M.S. Engineering Management, 2006
Marshall University

B.S. Civil Engineering, 1988
University of Florida

Administration – United States Air Force Technical School

EMPLOYMENT HISTORY

2007-Present	Potesta & Associates, Inc.
2000-2007	WV Dept. of Health and Human Resources
1997-2000	Summit Engineering, Inc.
1997	Pyramid Consultants, Inc.
1995-1997	Haworth, Meyer and Boleyn, Inc.
1989-1995	GAI Consultants, Inc.
1979-1983	United States Air Force

PROFESSIONAL REGISTRATION

Professional Engineer – West Virginia

AREAS OF SPECIALIZATION

Drinking water and wastewaster including funding coordination; hydrologic and hydraulic analysis including dam break; chemical and municipal solid waste disposal; surface coal mining; limestone quarry mining; abandoned mine lands reclamation; and site development.

PROFESSIONAL EXPERIENCE

Sewer Lines and WWTPs

Huntington Sanitary Board – Client Manager for oversight of designed construction of the following:

- Design, bidding, and construction management of combined sewer replacement project on 13th Street West and 19th Street, which included a combination of full trench replacement and trench-less technology pipe lining (cured-in-place pipe) for approximately 3,000 feet of 24 through 36-inch pipe.
- Redesign, bidding, and construction management of conversion of four ejector stations to submersible pump stations to include altering design from a cast-in-place concrete cap to allow building to remain. Design included new hatches and hoisting, ventilation equipment, heating, bypass features, and oversight of electrical design.
- 13th Street Pump Station – design, bidding, and construction management of installation of 30-inch bypass on 48-inch prestressed concrete cylinder pipe and replacement of 2-24" failing 90 degree discharge pipe bends, including air release valves. Project included installations of water stops in existing 48" pipe and coordination with the WVDEP to discharge into river during construction work.
- Assistance regarding the CSO long-term control plan's implementation schedule and lead participation development of asset management plan.
- Preparation of wastewater treatment plant incinerator failure analysis and replacement analysis.
- Environmental remediation of fly ash lagoon through West Virginia Voluntary Remediation Program and design of bioretention basin at WWTP for treatment of stormwater fitting "green" project criteria.
- Management of study and preparation of Preliminary Engineer Report for replacement of Huntington's primary 33 MGD pump station facility (13th Street).
- Evaluation of the mixing zone for the Wastewater Treatment Plant discharge.
- Replacement of 54" of PCCP force main crossing flood level at WWTP entrance.
- Design, bidding, and construction management of replacement of 54-inch CMP effluent line with 48-inch HDPE line and diffuser at WWTP, including installation of connection vault, degassing manhole, two manholes, and overflow channel and

rehabilitation of existing pipe at entrance to effluent line with ecocast lining.

- Design, bidding, and construction management of installation of new septage receiving and vacuum truck discharge station to include truck operator control station to allow flow measurement and billing, new access road and pump station to tie-into force main.

Town of Handley – Design of complete rehabilitation of three existing pump stations to include raising elevation of one station above flood plain level.

University of Charleston – Design engineer on rehabilitation of sanitary and stormwater system to include the design and construction of precise bore and jack of two sections main truck line (approximately 500 feet) under the existing main entrance area so that existing old trees, entrance walkways, and vegetation were not disturbed. Due to flat slope lines and requirement of line to meet existing manhole elevations, lines were accurate to a 1/100th foot.

Developed 201 Facilities Plan for $28 million wastewater collection and treatment project in Logan County, West Virginia.

Summit at Cheat Lake Residential Development – Design of package plant and gravity inflow sewer lines, 2,500 linear feet of 1.5-inch and 2-inch force main line from three pump stations for 120-acre, 95-lot residential development at Cheat Lake in Monongalia County, West Virginia.

American Electric Power Company:

- London Locks, West Virginia and Clayton Lake, Virginia – Peat Sanitary Sewer Treatment System, including sediment basin, peat treatment, and UV system

Water Lines, Water Storage Tanks, and Water Treatment Plants

West Virginia Bureau for Public Health

- West Virginia Infrastructure and Jobs Development Council:
  - Oversight of water technical review committee for infrastructure water projects
  - Member of sewer committee and sitting member of the Funding and Infrastructure Council
  - Oversight of technical assistance/review for infrastructure water projects and wastewater preliminary applications Represented Bureau of Public Health in committee and council meetings
  - Sitting member of consolidation committee

- Permitting Program – Directed review and issuance of public water and wastewater, public swimming pool, agricultural waste construction permits and water vending machine permits.
- Drinking Water Treatment Revolving Fund and State Tribal Assistance Grant Programs:
  - Oversight of loan and grant administration, including technical and financial review
  - Project selection
  - Coordination with appropriate federal and state agencies (environmental and funding) and public water systems
  - Coordination of bid advertising, loan closing, construction administration (processing of invoices, change orders, etc.)
  - Water system adherence to loan conditions
  - Preparation of program grant applications and reports to EPA including: annual reports, disadvantaged business enterprise reports, and intended use plans
  - Oversight of 2 percent technical assistance grant with the West Virginia Rural Water Association, which provides continuing education to water treatment plant operators
  - Oversight of the 4 percent administrative set-aside to Water Development Authority in financial management of the Drinking Water Treatment Revolving Fund
  - Directed, assessed, reported on and provided assistance on the technical, financial and management capabilities of public waters systems
  - Responsible for the oversight of program adherence to capacity development strategy, Governor's report, and annual reports to the EPA.

Project engineer on multiple waterline extension projects, including WVDEP-AML projects in central and southern West Virginia. Projects contained waterline, tank and booster station design, preparation of contract bid documents, and construction management.

Villages of Coolfont – Project Engineer for design, including three raw water wells drilling and development, field testing and design of 300 gallon per minute potable ionization water treatment plant to serve 1300-home village center and spa, three deep wells and raw water transmission lines. Water treatment plan was designed to treat hard water.

Webster County Commission, Countywide Water Study – Secured grant from the West Virginia Bureau for Public Health to conduct county wide study to include consolidation of county service providers in order to provide better service to customers in Webster County, West Virginia. Prepared preliminary engineering reports to provide service to Erbacon and Route 82 areas of Webster County.

Oil and Gas

In-house consultant with major FERC regulated natural gas transmission company – Developed environmental management plans for natural gas pipeline and storage projects to accompany construction drawings which included environmental controls including stream and wetland crossings, sediment and erosion controls, road access. Prepared FERC application documents containing plans and specifications; conducted onsite monitoring and site visits to make sure contractor was in compliance with plans.

Classified Natural Gas Production Company – Conducted water studies of ground, deep mine, and surface water sources to determine most feasible source to provide water for impoundments within the Marcellus shall basin in West Virginia in order to conduct fracking operations to obtain natural gas. After the water source was selected by the company conducted design of the raw water pump system and transmission line to the impoundment.

Hydrology and Hydraulics

City of Charleston – Stormwater analysis on existing and future developments of residential watershed in Charleston, West Virginia. Preliminary design of channels, culverts, and flood detention structures. Preparation of design report in which various alternative hydraulic structures were compared with respect to cost and constructability.

Preliminary design of a stormwater management system and grading plans for a regional mall in Western Pennsylvania. Evaluation of several drainage alternatives and pond designs for a site containing numerous wetlands.

Analysis and design of stormwater management for six separate sites, two of them shopping centers, including storm channels, surface and subsurface stormwater detention facilities, culverts, and pipe sizing design.

Design, installation, monitoring and analysis of data from a stream gage for a water supply study of a power generating plant owned by an independent power company.

Pennsylvania Department of Transportation – Drainage structure designs for various projects to include hydrologic analysis, storm channel and detention pond design.

Private Dam Owners – Hydrologic and hydraulic analysis on various private dams within West Virginia to determine impacts from multiple storm events on dam principal and emergency spillways, overtopping and impacts to downstream structures, including dam break conditions using HEC-HMS and HEC-RAS computer programs.

Civil/Site Design

Vaughan Railroad – Preparation of construction specifications for railroad line construction, including erosion and sediment control, culvert installation and subgrade compaction.

U.S. Army Corps of Engineers – Participated in utility relocation planning for two local flood protection projects for Petersburg and Moorefield, West Virginia to include utility relocation design and quantity and cost estimation.

Abandoned Mine Lands

West Virginia Department of Environmental Protection – Analysis and design of stormwater channels, culverts, energy dissipation systems, and dewatering underdrain systems for two landslides and two coal refuse regrading projects.

West Virginia Department of Environmental Protection, Abandoned Mine Lands (WVDEP-AML) (Ducks Unlimited Award Winner) – Primary engineer for Bear Run project, consisting of regrading of three coarse coal refuse piles, and re-establishing eight fine coal refuse impoundments with breached embankments into wetland areas, each connected by a designed stream channel in Gilmer County, West Virginia. Project included preparation of conceptual report based on field reconnaissance for Bear Run abandoned mine reclamation project; and evaluation of several hydrologic reclamation alternatives to include wetland and channel locations and re-establishment of impoundments. Project also included

hydrology and final design of grading plans to include slope stability, and hydraulic structures to include channels, culverts, impoundments and spillways, dewatering underdrains, and energy dissipation systems, and quantity and cost analysis.

Virginia Department of Mines, Minerals, and Energy, Ely Creek and Davis Wetland Acid Mine Drainage projects – Design of passive treatment systems for highly acidic mine water with high iron laden water. One treatment systems contained a bentonite slurry wall, natural well system, anoxic limestone subsurface treatment, and treatment settling ponds with phyloremediation through the use of plants. Another treatment system used the existing limestone channel and a polishing pond with wood curtain.

Virginia Department of Mines, Minerals, and Energy, Bevins Landslide – Design of stabilization/removal of a slide using soil nailing and grout wall, removal and disposal of slide material, installation of temporary and permanent drainage control measures, and upgrade of the existing entrance roadway onto the mine bench where the Bevins residence is located in Buchanan County, Virginia.

Mining

Performed design analysis, permitting, and technical support/review in the preparation of surface and underground coal mine permits, including mine planning, incidental boundary revisions, hydraulic/hydrologic design, fill design, surface water runoff analysis, and geologic analysis. (Two permits were for 1,400 and 1,700-acre surface mines.)

Managed office/technical support staff on various coal-related projects, including the design, plan and permit preparation, cost estimates, hydrologic/hydraulic design, valley fill design/quantification and slope stability and belt-line layout.

Complete hydrologic/hydraulic design of two coal refuse slurry impoundments, including design/permit preparation for sedimentation ponds, collection/diversion channels, slurry pond decant systems, under drain systems, filter diaphragm systems and emergency spillways.

West Virginia Division of Highways – Performed mineral appraisals to determine potential financial impacts to coal reserves and mining due to construction of new roadways.

Classified Coal Company - Performed peer review on design of a deep coal mine dewatering project in which water flow ranging from 3,500 GPM to 8,500 GPM was being pumped down hill in Western Pennsylvania. Review considered water separation, water hammer, development of negative pressures due to water evaporation and water release/vacuum valves, and use of pigging stations. Analysis subsequently led to the design a pressure sustaining valve system to control the water in the pipeline and energy dissipater at the end of the pipeline, design of a retaining wall around dissipater, and design of outfall structure to discharge water into Monongahela River.

Classified Limestone Mining Company – Designed and permitted proposed limestone quarry including quarry layout, sequence of quarry operations, sediment controls (channels and ponds), and reclamation. Project was located in southwestern Pennsylvania.

Analysis and design of diesel-generated electric pump system for decant of slurry water for coal refuse impoundment.

Landfills/Solid Waste/Waste Disposal

For municipal and industrial landfills, performed engineering for various proposed and existing landfills to include design for leachate impoundments, expansions and new permits comprising of plans and specifications and coordination of field activities associated with earth moving for construction.

Key participant in engineering management of solid waste landfill in Monongalia County, West Virginia, including analysis of technical and economic alternatives of the storage and expansion capacity of landfill and feasibility study of solid waste alternatives to include recycling, transfer station, composting facility and expansion to a composite liner system.

Design of leachate impoundment for landfill, including specifications and drawings. Coordinated field activities associated with earth moving for construction of HDPE composite liner system.

Analysis and design of capping system and appurtenant hydraulic structures for landfill, and preparation of grading plans, detail drawings, specifications, cost analysis, and application for closure. Alternative synthetic liner systems were evaluated in the capping system design, including analysis of slope stability.

Design of two solid waste and one industrial waste landfills, including analysis of sedimentation controls and hydrologic analysis, design of liner system, sediment and leachate ponds, decant structures, sedimentation channels, grading and underdrain system. Also provided drawings and specifications for design and permitting package.

American Cyanamid – Analysis of infiltration characteristics of cover materials for closure of an industrial sludge basin using Hydrologic Evaluation of Landfill Performance model computer system.

CHRISTOPHER A. GROSE, L.R.S.

Senior Engineering Associate

EDUCATION

M.S. Geological Engineering, 1990
University of Missouri-Rolla

B.S. Civil Engineering, 1988
West Virginia Institute of Technology

EMPLOYMENT HISTORY

1997-Present	Potesta & Associates, Inc.
1994-1997	Terradon Corporation
1990-1994	GAI Consultants, Inc.
1989-1990	University of Missouri-Rolla
1989	Triad Engineering Consultants (summer)
1988	West Virginia Institute of Technology
1983-1988	Clint Bryan & Associates Architects (summers)

PROFESSIONAL REGISTRATIONS

Licensed Remediation Specialist – West Virginia

PROFESSIONAL CERTIFICATIONS

Hazardous Waste Site Operations and Superfund Worker Protection Training
American Red Cross Standard First Aid and CPR
Troxler Moisture-Density Gauge

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers
Association of Engineering Geologists
Society of America Military Engineers

AREAS OF SPECIALIZATION

Geological/Geotechnical engineering related to subsurface exploration studies, soil and rock slope design, landslide causation studies, foundation system design, surface/subsurface hydrogeology, ground subsidence, contaminant transport and groundwater flow modeling. Geological study of hazardous waste remediation sites, CERCLA/SARA, RI, and FS report compilation, geological and geotechnical aspects of siting and design of municipal and industrial waste landfills.

PROFESSIONAL EXPERIENCE

Geotechnical

West Virginia Division of Highways – Geotechnical engineer on geotechnical/landslide master services agreement for on-call services for a three-year period.

Geotechnical engineer for various bridge and highway projects including:

- North Bridgeport Bypass
- McDowell County Schools
- Corridor H
- Dundon Bridge
- Sulphur Springs Bridge Replacement
- Smith Creek Bridge
- Martha Truss Bridge
- Martha Concrete Girder Bridge Replacement
- Dry Run Interchange
- I-81 Upgrade
- Platinum Drive
- Kenna Ridge Business Industrial Park/Access Road

Forensic study, expert testimony, and legal support related to the failure of numerous soil/rock slopes throughout West Virginia. This work included extensive review of relevant project case documents, site reconnaissance visits, interviews with project personnel, and deposition testimony.

Lynn Elementary School – Technical insight and recommendations to attorneys representing an adjacent property owner related to the contributing factors related to the formation and continued failure of an excavated soil slope. The toe of the slope was excavated during the site development of the proposed elementary school site in Lynn, West Virginia.

Crichton & Crichton – Landslide formed along a wooded hillside below a residential driveway on Pleasant Lane in Wood County, West Virginia. The slope failure was noted during a substantial leak in an existing water main. The work included a review of case documents, interviews with various residents (plaintiffs in the case) and the development of supporting causation theory for the formation of the landslide. The work also includes the development of repair alternatives and associated construction estimates to be considered during the dispute hearing between the plaintiff and defendants.

Chesapeake Appalachia/Law Office of Jeffrey Mahal (R. Baker Natural Gas Production) – Provided technical study and file review of case documents related to the grading contractors construction work efforts to prepare a well pad for the installation of a series of horizontal gas production wells in Marshall County, West Virginia. The work included the removal of soil and rock from and existing hilltop. The resulting material was placed or wasted in series of three side hill files along the edges of the resulting well pad. All three of these fills experienced progressive and ongoing failures following the construction effort. Reviewed design documents, construction records, and details related to several repair attempts to result in the development of a professional opinion related to the various factors contributing to the multiple slope failures.

Nationwide Trial Division/Khan & Wheeler (Ross v. WVAW Landslide Case) – Provided professional opinion related to the formation of a slope failure along the Elk River immediately behind several commercial and residential homes near the Town of Elkview, West Virginia. The initial landslide occurred immediately following a main waterline break along the front of the structures. The regressive and prolonged failure continued over several weeks and ultimately damaged a gravity sanitary line as well a several of the structures. Work included an extensive review of several years of case records provided for the case including a review of existing utility maintenance records, historic climatologic data, river stage information and depositional testimony from many of the affected parties. A summary of profession opinion report was prepared describing a number of factors including lack of maintenance storm culverts in the area as well as an increase of saturation along the slope from the failed water main as the cause of the slide. It was determined that several of the structures were supported on previously placed fill material which was placed along the river bank in the early 1900's in conjunction with the initial roadway construction. This coupled with the lack of maintenance and presence of deteriorated drainage culverts likely contributed to the slope failure. The initial installation of this fill material was determined through an extensive study of the historic topographic mapping of the area.

Responsible for development of geotechnical and geological recommendations as well as development of stabilization designs for a number of failed soil/rock slopes in West Virginia. This work included initial site reconnaissance visits, development of a subsurface exploration study and materials testing program, evaluation of stabilization alternatives, and construction plan preparation.

Travelers Insurance/City of Charleston – Project included a subsurface exploration study, engineering design, and global stability evaluation of a failed soil slope in a residential neighborhood on Bona Vista Drive for the City of Charleston, West Virginia. The slide was caused by a water main break along an existing residential neighborhood paved roadway. The recommended slope stabilization method was to install a soldier beam and lagging retaining wall along an existing paved roadway (supporting the buried utilities) with the remainder of the failed slope below being removed and replaced with compacted soil backfill.

Stone Energy Pribble Tank – Work included the exploration and study of a failed soil/weathered rock slope which was loaded through the placement of fill near the top of the slope to provide adequate area for the construction of 2- 2,400,000 gallon water storage tanks in New Martinsville, West Virginia. Shortly following the installation of the tanks a large section of the hillside failed leaving one of the tank foundation partially unsupported. Following the subsurface exploration and drilling work, a stabilization plan was developed which included the removal of the failed soil mass (>50,000 CY) followed by the replacement of compacted soil material behind a large toe key and buttress. The repair also included surface diversion drainage ditches and numerous

bond benches along the underlying rock line which were fitted with under drains to collected subsurface seepage.

NiSource/Columbia Gas Pipeline Group SM-80 Loop Gas Transmission Line – Development of a subsurface exploration and drilling plan to determine the extent and depth of a soil and weathered rock slope failure which threatened the performance and stability of a 30-inch high pressure natural gas transmission line in Kanawha County, West Virginia. The slide location was remote and situated along a steep hillside. The stabilization plan recommended the use of soil nail technology due to the remote location and rather inaccessible nature of the location. This repair and stabilization technique allowed for the insitu repair of the failed slope without extensive excavation and backfill which was deemed difficult and would have required more land disturbance resulting in additional slope stability concerns.

EQT Rockport #7244 Natural Gas Storage Well Pad – Project involved the assessment and repair recommendations for a section of failed fill slope immediately below existing and active natural gas storage well near the community of Rockport in Jackson County, West Virginia. The failed slope was caused by improper surface drainage control along the pad and access road. The stabilization plan included the excavation and removal of the failed slope following "shut-in" of the storage well. The upper failure scarp was situated immediately adjacent the well head which was protected during the stabilization work. Following installation of a rock toe buttress and key way, the failed soil material was amended using lime to reduce the moisture content which was required to achieve the recommended inplace density during placement and compaction. Following the regrading effort the slope was trimmed and seeded followed by the grading a several diversion and collection ditched to control runoff from the upper portion of the hillside below the well pad.

City of Charleston – Geotechnical assessment and development of regrading construction plans for the repair of a failed soil slope below Grandview Drive for the City of Charleston, West Virginia. The slope failure occurred between two adjacent residential structures and encompassed a sanitary sewer main as well as a storm drainage pipe receiving storm drainage from Grandview Drive. The stabilization plan involved the removal of the failed mass beginning at the toe of the slope and then working progressively upslope to result in a stabilized and regraded slope surface. The work require the removal of all failed material to the underlying rock surface and included the installation of a shot rock toe buttress which was installed along a natural topographic bench near the toe. Following completion of the work the affected utilities were installed either below the fill material or outside the regraded slide area.

Greer Industries Cheat River Quarry Haulroad – Project included the development of stabilization and repair recommendations for a failed soil slope which impacted a critical haulroad utilized by the quarry operator to move raw shot rock material from the quarry to the crusher at the aggregate plant in Rowlesburg, West Virginia. The landslide occurred as a result of the failure of a cross drainage culvert in the haulroad. The failed soil mass was removed to the underlying bedrock and following installation of a stone toe buttress and toe key, the material was blended with aggregate material from the plant and placed in compacted lifts. The underlying rock surface was excavated to result in a series of "bond benches" allowing for the installation of underdrains below the compacted fill to collect groundwater and seepage from the underlying rock. This prevented saturation of the fill material.

Responsible for the design, management, and inspection of a geotechnical investigation of a proposed five mile rail extension located in Nicholas County, West Virginia. Investigation included study and design of planned rock cuts, and track foundation materials.

General Services Administration – Site evaluation, including continuous HNU scanning of collected soil samples and installation of piezometers for two proposed sites near Charleston, West Virginia.

West Virginia Department of Environmental Protection – Foundation design for a proposed 1,000,000 gallon potable water storage tank and valve pit near Cassidy, West Virginia.

Rhone Poulenc Ag Company – Subsurface sample collection, resistivity measurements, explosivity measurements, and decontamination procedures for an organic contamination study at Institute, West Virginia.

Preparation of foundation investigations for several large structures including a parking garage and student housing complex at Marshall University in Huntington, West Virginia. Tasks included development of subsurface

exploration program, soils/rock sampling, testing program, and preparation of a final geotechnical report.

Abandoned Mine Lands

WVDEP Abandoned Mine Lands and Reclamation – Preparation of Phase I and II water studies throughout the state of West Virginia. Work items included interview of area residents to determine major quality and quantity problems, field and records research to determine the location of known pre-law mining activity (which could potentially affect groundwater quality), collection of groundwater samples, and design of water distribution facilities.

WVDEP Abandoned Mine Lands and Reclamation – Subsurface investigation to determine the extent of a landslide for Courtright Highwall AML Project in Bridgeport, West Virginia. Field surveying was completed to establish topographic mapping and control, and subsequent design of landslide repair alternatives. Design ultimately selected included a reinforced slope using stabilizing grid. Landslide contained 400,000 cubic yards of material.

WVDEP Abandoned Mine Lands and Reclamation – Subsurface investigation, surveying, and design for reclamation of a large coal refuse pile and two mine entries for Vivian Refuse Pile AML Project in Vivian, West Virginia. Plans, specifications, cost estimate, coal refuse reprocessing evaluation, and supporting documents for regrading over150,000 cubic yards of refuse, surface water control, mine seals, and riprap toe protection were completed.

WVDEP Abandoned Mine Lands and Reclamation – Subsurface investigation, surveying, and design for reclamation of three coal refuse piles and six mine entries for Kimball Refuse Pile AML Project in Kimball, West Virginia. Design included replacement of a water well and related supply piping for the Town of Kimball. Completed preparation of plans, specifications, cost estimate, coal refuse reprocessing report, permit for new well, and other supporting documents for reclaiming this large site with over ½ million cubic yards of regarding.

WVDEP Abandoned Mine Lands and Reclamation – Project Engineer for the Mulberry (Stover) AML Landslide Project in Fayette County, West Virginia. Work included a difficult subsurface investigation, design of a remediation of landslide associated with abandoned mines, and preparation of plans and specifications for a reclamation project.

WVDEP Abandoned Mine Lands and Reclamation – Project Engineer for assessment of the Covey Creek Mine Fire AML Project Boone County, West Virginia. Work included subsurface investigation and temperature assessments inside an abandoned burning deep mine.

Mining

West Virginia Division of Environmental Protection – Engineering evaluations, including collection and analysis of core samples, for possible subsidence-related fracturing of several areas potentially affected by mining subsidence.

Peabody Coal Company – Subsidence evaluation and slope monitoring, using extensometers and tilt plates located on the slope face, of a 60-foot road cut experiencing subsidence-induced fracturing near Kopperston, West Virginia.

Mingo Logan Coal Company – Completion of formal subsidence control plan for a proposed 14,000-acre long-wall mining operation at the Mountaineer Mine in Wharncliff, West Virginia.

Peabody Coal Company – Evaluation of potential stream flow attributed to long-wall deep mining subsidence in minimal overburden areas in southern West Virginia. Responsibilities included the review of mine maps, stream reconnaissance studies, and the establishment of three in-stream V-notch weirs. The weirs were monitored and maintained during a seasonal study period to generate direct flow measurements. The WVDEP also prepared a study for the site that was reviewed and comments prepared for the results.

West Virginia Department of Highways – Evaluation of subsurface conditions including both soil and rock to provide geotechnical recommendations related to potential bridge abutment foundation systems near Martinsburg, West Virginia. Alternatives included both shallow and deep foundations. Deep foundations were required at several abutments due to voids encountered in limestone bedrock.

Evaluation of numerous failed soil fill slopes to determine probable failure mechanisms in order to develop remediation alternatives. Responsible for the development

of regrading plans which included subsurface drains, benching schemes, and toe buttresses.

Completion of several environmental assessments for coal properties. Work included emphasis on both environmental and reclamation liabilities associated with pre and post SMCRA sites on the properties.

- Massey Coal Services, Inc.
- Eastern Associated Coal Corporation

West Virginia Department of Environmental Protection – Engineering design of several wetland habitat areas relating to the effective remediation of a coal refuse disposal site in Glenville, West Virginia.

Preparation of several Article 3 surface mining permit applications for various West Virginia coal companies:

- Eastern Associated Coal Corporation – Proposed deep mine using longwall mining techniques in Boone County, WV, located in the Eagle coal seam.
- Hobet Mining, Inc. – Deep mine using conventional mining techniques near Madison in Boone County, WV. Located in the No. 2 Gas (Campbell's Creek) coal seam.
- Rum Creek Coal Sales – Deep mine using conventional mining techniques near Logan in Logan County, WV. Located in the Alma coal seam.
- Eastern Associated Coal Corporation – Surface mine mountain top removal techniques near Twilight in Boone County, WV. Located in the Coalburg and Lower Kittanning seams.

Landfills/Solid Waste/Waste Disposal

WVDEP Closure Assistance Program – Design of final landfill closure for abandoned solid waste facility. Design included diversion and collection channels, cap design, leachate collection system, and 150,000 gallon leachate storage tank in Montgomery, West Virginia.

American Cyanamid – Engineering design for the closure of a chemical waste landfill in Parkersburg, West Virginia. Completion of a settlement analysis to determine the expected consolidation of waste during dewatering. Cover design incorporated a composite liner system with synthetic drains. The cap utilized synthetic reinforcement to minimize consolidation-induced stresses on the synthetic liner.

West Virginia Department of Environmental Protection – Responsible for the development and design of several interim or maintenance related items associated with drainage at the Monongalia County Landfill in Morgantown, West Virginia. Included the design and upgrade of both new and existing channels, diversions to berms to minimize surface water infiltration and minimizing the amount of leachate generation.

American Cyanamid – Permit completion for closure of a chemical sludge impoundment near Parkersburg, West Virginia. Analysis of existing monitoring well configuration.

Design, management, and project oversight during construction for the closure of a 7-acre biological sludge pond in Nitro, West Virginia. Preliminary design studies included the completion of batch tests to evaluate stabilization materials. Also handled the development and submittal of several permits associated with the project including erosion and sediment control plan, Army Corps of Engineers permit, and a wetlands investigation and nationwide 404 permit.

Development of closure design for a 14-acre inactive waste water treatment pond in Nitro, West Virginia. Responsibilities included evaluation of sludge stabilization technologies, types of reagent and mixing ratios to achieve the required in-place strengths. Conducted contractor interviews with the owner, as well as providing assistance to the owner during preparation of the construction contract. During construction, conducted weekly safety meetings on-site with the contractor. This project was also expanded to provide stabilization of a 1.5-acre digester basin adjacent to 14-acre pond. The original contract was extended to cover stabilization of this pond. Stabilization efforts included submittal of an Army Corps of Engineers' nationwide permit to stabilize the bank of the Kanawha River and application of a West Virginia NPDES General Stormwater Construction Permit.

North Fork Landfill – Permit completion for a new municipal landfill, including design and construction of monitoring wells to monitor several aquifers in Wheeling, West Virginia.

Sycamore Landfill – Part I permit completion, design, and implementation of a drilling program, including evaluation of an existing monitoring well configuration.

Testing of existing site soils for sources of suitable liner material.

Rhone Poulenc Ag Company – Completion of several Part I Solid Waste Facility permits including the design and implementation of drilling programs, formal geological studies, hydrogeological analysis of proposed sites, and locations and development of upgradient and downgradient groundwater monitoring wells. Design, construction, and development of seven monitoring wells for a proposed 13-acre industrial waste disposal facility near Institute, West Virginia.

Groundwater

Operation and maintenance of several groundwater remediation systems including pump and treat and sparge systems for a large chemical manufacturer in Nitro, West Virginia. The pump and treat technology is designed to recover kerosene in one instance and TCE in another. Both systems are safety oriented and are fully automatic. The sparge system is a study/field test to determine the impact that oxygen injection will have on the degradation of phenolic compounds existing in the groundwater.

Columbia Gas Transmission Corporation – Evaluation of numerous groundwater monitoring wells to determine the direction of migration and the feasibility of utilizing them in a planned pump and treat recovery system. The site was an active compressor facility located in Eastern Kentucky.

Design and completion of several geological and hydrologic investigations to determine nature and direction of groundwater flow associated with proposed limestone quarry sites in Nitro, West Virginia. The sites were all associated with Karst terrain and dual permeability systems and primarily fractured flow regimes. Studies included the deployment of drilling equipment to install groundwater monitoring wells.

Measurement of stratified in-site permeability of rock strata in NX boreholes in Hurricane, West Virginia. The permeability measurements were reviewed and evaluated to develop groundwater monitoring systems associated with both existing and proposed municipal landfill disposal facilities.

Rhone Poulenc Ag Company – Analysis and study of elevated levels or organic constituents and elevated pH values in existing monitoring wells. Study to determine if well construction techniques or development procedures contributed to the presence of these constituents.

Dilley's Mill – Review of regional groundwater information for a summer Boy Scout camp facility to locate and construct a replacement drinking water well for the facility. Responsibilities included the development and review of existing facility usage, determination of the location and depth of the proposed water well and design of the well to meet with the requirements of the State of West Virginia Department of Health standards.

Union Carbide Corporation – Design and completion of several monitoring wells to monitor an abandoned fly ash disposal area. Included hydrologic analysis of site geology to determine major aquifers present in the area.

Completion of several groundwater contamination studies in West Virginia. Contaminants included diesel fuel, gasoline, chlorobenzene and benzene. Studies included field exploration utilizing various methods including air and mud rotary drilling. Responsible for the setup, calibration, and analysis of groundwater computer models to lend insight into the flow regimes and dispersion characteristics of the potentially affected areas.

Preparation of Phase I, II, and III water studies throughout the state of West Virginia for the West Virginia Division of Environmental Protection, AML section. Work items included interview of area residents to determine major quality and quantity problems, field and records research to determine the location of known pre-law mining activity, which could potentially affect groundwater quality, collection of groundwater samples, and design of water distribution facilities.

ESAs (Phase I and II)

Responsible for the design and implementation of drilling and sampling programs for several Phase I and Phase II environmental assessments.

DAVID B. SHARP, P.E.

Branch Manager

EDUCATION

M.S. Civil Engineering, 1995
West Virginia University

B.S. Civil Engineering, 1993
West Virginia University

EMPLOYMENT HISTORY

2003-Present	Potesta & Associates, Inc.
2000-2003	CTL Engineering, Inc.
1997-2000	Potesta & Associates, Inc.
1994-1997	Terradon Corporation

PROFESSIONAL REGISTRATIONS

Professional Engineer – West Virginia, Pennsylvania, Maryland, Ohio, and Kentucky

AREAS OF SPECIALIZATION

Involved with many aspects of civil engineering with a special interest in the geotechnical/environmental aspects. Responsibilities have included projects involving Civil Site Design, Geotechnical Design; Solid Waste Management Facility Design including geosynthetic applications; hydrologic, hydraulic design; transportation/highway projects, including geotechnical and right-of-way plans; and municipal water and wastewater projects.

PROFESSIONAL EXPERIENCE

Geotechnical

Engineer responsible for performing subsurface investigations, preparation of geotechnical reports, coordinating laboratory analysis programs, providing recommendations for lateral earth pressures, bearing capacities, modulus of subgrade reactions, settlements, and construction specifications for multi-story structures. Foundations considered have included steel H-piles, auger-cast piles, drilled piers, spread footings, and mat foundations.

- Family Dollar Store – Berkeley Springs, WV
- Rubbermaid Distribution Center Addition – Winchester, VA
- WVU Transportation Center/Parking Garage – Morgantown, WV
- 4 West Water Treatment Plant – Greene County, PA
- CA Ventures (9 story student housing building) – Morgantown, WV
- Copper Beech Student Housing (included 31 buildings, parking areas, and 11,250 linear feet of retaining walls) – Morgantown, WV
- Sunnyside Commons Student Housing (included three multi-story buildings, parking, and 43,000 sq. ft. of retaining walls) – Morgantown, WV
- WVU Engineering Building East Addition – Morgantown, WV
- Potomac State College Admissions Building Addition – Mineral County, WV
- Glenville State College Health & Sciences Building – Gilmer County, WV
- Glenville State College Residence Hall – Gilmer County, WV
- Christy Street Office Building – Morgantown, WV
- Harry Green Nissan Dealership Building Addition – Harrison County, WV
- Elkins Dodge Dealership – Randolph County, WV
- Sam's Club Fueling Station – Clarksburg, WV
- Wal-Mart Fueling Station – Connellsville, PA
- Cheat Lake Elementary School Building Addition – Monongalia County, WV
- Churchhill Village Housing Project – Monongalia County, WV
- R.E. Michael HVAC Commercial Building – Monongalia County, WV

- West Run Student Housing (including 16 buildings, parking areas, and 50,000 sq. ft. of retaining walls) – Morgantown, WV
- Fairmont Federal Credit Union – Bridgeport, WV
- Morgantown Waterfront Marina – Morgantown, WV
- Residence Inn – Morgantown, WV
- Suncrest Executive Office Plaza and Parking and Garage – Morgantown, WV
- WVU Research Park – Morgantown, WV
- View at the Park Apartment Complex – Morgantown, WV
- Marriott Hotel – Morgantown, WV
- Bucks Tavern – Morgantown, WV
- Stouts Run United Methodist Church Addition – Parkersburg, WV
- Fairfield Inn Hotel – Fairmont, WV
- Wendy's Restaurant – Morgantown, WV
- Sunoco Service Station – Robinson Township, PA
- St. Stephens Baptist Church – Morgantown, WV
- Islamic Center – South Charleston, WV
- Oak Hill Public Library – Oak Hill, OH
- Westside High School – Oceana, WV
- WVARNG Readiness Center – Summersville, WV
- Student Housing Facility, Parking Garage, Library/Information Center, Student Center Addition, Jomie Jazz Center, and Child Care Center for Marshall University – Huntington, WV
- U.S. Equipment Distributors – Huntington, WV
- PC WV #2 and #3, Pace Carbon Fuels – Summersville and Eckman, WV
- WVU Luxury Box for Mountaineer Field – Morgantown, WV
- Marshall University Mid-Ohio Valley Center – Point Pleasant, WV
- Arbor Terrace Assisted Living Facility – Charleston and Huntington, WV
- Pocahontas County PSD Wastewater Treatment Plant – Snowshoe, WV
- Monongalia General Hospital Expansion and Access Road – Morgantown, WV
- Kasson Elementary/Middle School Repair Project – Kasson, WV
- North Marion Vocational/Technical Center School Repair Project, Marion, County, WV
- Monongalia County Public Office Building – Morgantown, WV
- Numerous Cell Phone Towers in WV, PA, and MD
- Numerous Natural Gas Compressor Stations Pads and Additions
  - EQT – Logansport Compressor Station Addition in Wetzel County, WV
  - EQT – Plasma Compressor Station Pad in Monroe County, OH
  - EQT – Corona Compressor Station Pad in Wetzel County, WV
  - EQT – Gemini Compressor Station Geotechnical Feasibility in Marion County, WV
  - EQT – Gemini Interconnect Pad in Marion County, WV
  - Basic Systems, Inc. – Waynesburg Compressor Station Addition in Greene County, PA
  - Basic Systems, Inc. – Gettysburg Compressor Station Addition in Adams County, PA
  - Basic Systems, Inc. – Greencastle Compressor Station Addition in Franklin County, PA
  - Basic Systems, Inc. – Files Creek Compressor Station Addition in Randolph County, WV
  - Basic Systems, Inc. – Smithfield Compressor Station Addition in Wetzel County, WV
  - Dominion Transmission – Crayne Compressor Station in Greene County, PA
- Numerous Marcellus Well Pad Sites – Northern WV
  - Stone Energy – Mills Wetzel #3 Well Pad in Wetzel County, WV
  - Stone Energy – Conley Well Pad in Wetzel County, WV
  - Stone Energy - Langmyer Pad in Wetzel County, WV
  - Mountaineer Keystone – Mackey-Wolfe Well Pad in Barbour County, WV
  - Chesapeake Energy – Rayle Coal Co. Well Pad in Ohio County, WV
  - Chesapeake Energy – Sew Trust Well Pad in Ohio County, WV
- Numerous residential geotechnical projects in Charleston and Morgantown, WV
- Geotechnical Recommendations for Natural Gas Transmission Lines including Horizontal Directional Drilling projects
  - EQT Midstream H-310 Coal Refuse Area in Monroe County, OH
  - EQT Midstream, Harrison County HDD in Harrison County, WV
  - EQT Midstream, Ohio River HDD in Wetzel County, WV and Monroe County, OH

Responsible for the coordination of subsurface investigation, laboratory testing program, slope stability analysis and preparation design documents associated with the repair of landslide at various site throughout West Virginia. Representative designs have included soldier beam and lagging retaining walls, gabion basket retaining walls, segmental block retaining walls, rock toe keys and buttresses, and drainage improvements. The following provides a list of representative projects:

- Bowser Street Landslide Repair - Town of Granville – Monongalia County, WV
- Marshall Portal Access Road Landslide Repair – Greene County, PA
- Weekley Well Pad Landslide Repair – Wetzel County, WV
- Shupbach Ridge Road Landslide Repair – Wetzel County, WV
- Mills Wetzel # 2 Well Pad Landslide Repair – Wetzel County, WV
- Mills Wetzel #2 Road Landslide Repair – Wetzel County, WV
- Potts Well Pad Landslide Repair (2 separate landslides) – Wetzel County, WV
- Haynes Branch Gas Line Landslide Repair – Wetzel County, WV
- Decker's Creek Mine Stockpile Area Landslide Repair – Preston County, WV
- Wentz Freshwater Impoundment Embankment Stability Repair – Barbour County, WV
- Columbia Gas Transmission – Well #7331 Slide Repair, Elkview, WV
- Cline Tower Landslide- Winfield, WV
- Wellford Tower Landslide – Clendenin, WV
- Massie Ridge Tower Landslide – Camp Creek, WV
- Fisher Landslide – Elkview, WV
- Kennawa Landslide – Charleston, WV
- Burlew Landslide – Charleston, WV
- Lee Landslide – South Charleston, WV
- Fairmont North Tower Landslide – Fairmont, WV
- 6th Street Tower Landslide – Huntington, WV
- Joyce Landslide – Chesapeake, OH
- WVAML Tuppers Creek Emergency Landslide – Tuppers Creek, WV
- Schmidt Landslide – Gallipolis, OH
- Disposal Service, Inc. Landslide – Hurricane, WV
- Wellston High School Landslide Repair – Wellston, OH
- Pribble Tank Landslide Repair – New Martinsville, WV
- Potokczny Well Pad Landslide Repair – Marion County, WV
- Ridgepoint Landslide Repair – Morgantown, WV
- Logston Landslide Repair – Wheeling, WV

Served as an Expert Witness in numerous cases involving geotechnical, earthwork construction, and/or drainage issues. Many of these cases involved a review of available information, development of professional opinions, issuance of an expert report, depositions, and expert testimony.

- Larry Rine, et al. v. Chesapeake Appalachia, LLC. Robinson & McElwee, Civil Action No. 5:11-CV-4 – Landslide on Natural Gas Well Pad
- Bisacca v. Pennsylvania Department of Transportation. Thomas J. Dempsey, Attorney at Law – Earthwork Construction Practices
- Sven Verlinden and Lisa Verlinden v. Morgantown Utility Board, et al. Shuman, McCuskey & Slicer, PLLC – Civil Action No. 11-C-573, Combined Sewer Flooding
- Russell D. Kitchen and Suzanne G. Kitchen v. Morganton Utility Board. Shuman, McCuskey & Slicer, PLLC – Civil Action No. 11-C-745, Combined Sewer Flooding
- Darin O. Arnold and Sarif J. Arnold v. Morgantown Utility Board. Shuman, McCuskey & Slicer, PLLC – Civil Action No. 11-C-749, Combined Sewer Flooding
- Rider v. Fairmont Homes, LLC., Flaherty, Sensabaugh & Bonasso, PLLC – Claim No. 1012802, Landslide and Residential Construction Issues
- Thomas A. Logston and Joanne C. Logston v. Charles E. Kolb d/b/a Kolb Excavating, A. D. Baker Homes, Inc., and Alan D. Baker, Bowles, Rice, McDavid, Graff & Love – Civil Action No. 10-C-116, Landslide Resulting in Property Damage
- LJH, Inc. v. Quadruple S. Farms, LLC and Four-S-Development, Bowles Rice LLP – Civil Action No. 09-C-438, Rockfall and Commercial Construction Practices
- Mingo County Airport Authority Claim Against Appalachian Paving & Aggregate, Inc., Robinson McElwee, PLLC – Earthwork and Construction Related Issues
- Colaianni Construction, Inc. Claim for Cost Recovery Against Koker Drilling at the Wetzel County Hospital, Wellness Center Addition, Spillman, Thomas, & Battle – Retaining Wall Failure Resulting in Building Damage
- Hilling Enterprises, LLC et al. v. Midtown Motors, Inc. et al. – Civil Action No. 13-C-308, Landslide Causing Property Damage
- Stan-Corp. v. Scott Properties, LLC. et al., Bowles Rice LLC – Landslide Impacting Roadway and Property
- Stephen C. Fish et al. v. McCloy Construction et al., Bowles Rice, LLP – Civil Action 03-C-3050, Structure Foundation Settlement
- Industrial Machine v. American Geotech. Bowles Rice, LLP – Civil Case 02-C-115, Subsurface Exploration and Geotechnical Design

- Pell, Robert K., et al. v. SAMOA, LLC, et al. , Claim No.010510386236: - Drainage Related Claim

Involved with the layout of the boring plan, staking borings in the field, preparation of the boring contract documents, soliciting bids, awarding drilling contracts, monitoring of drilling operations, coordination of laboratory testing programs, preparation of boring diagrams, and preparation of subsurface exploration report foundation recommendations and slope reviews for various West Virginia Department of Transportation Projects:

- Platinum Drive Urban Connector – Bridgeport, WV
- Segment of WV State Route 2 – Moundsville, WV
- Segment of National Road – Wheeling, WV
- Segment of North Bridgeport Bypass – Bridgeport, WV
- Corridor H, Section IV – Davis, WV
- Sulphur Springs Bridge – Hundred, WV
- Dry Run Interchange – Martinsburg, WV
- Interstate 81 Hainsville, Bessemer & Tuscorora Creek Bridges – Martinsburg, WV

Civil/Site Design

Project Manager/Engineer on numerous projects involving most aspects of site development. Involvement has included civil/site design, geotechnical aspects, hydrology/hydraulics, permitting, erosion/sediment control/ permitting, etc.

- University Place Parking Garage – Morgantown, WV
- Sunnyside Commons Student Housing Project (included 5 multi-story buildings, 268 parking spaces, and 43,000 sq. ft. of retaining walls) – Morgantown, WV
- Coombs Farm Residential Development – Morgantown, WV
- Morgan Point Residential Subdivision – Morgantown, WV
- Town of Granville Boat Ramp Project – Granville, WV
- West Run Student Housing – 1,000 bed student housing project, Morgantown, WV
- Copper Beech Student Housing – 1,000 bed student housing project, Morgantown, WV
- Summit at Cheat Lake Residential Development – Morgantown, WV
- Summit at Greystone Residential Development – Morgantown, WV
- Sleepy Hollow Residential Development – Morgantown, WV
- Shiloh Residential Development – Morgantown, WV
- Summerfield Residential Development – Morgantown, WV
- Mayfield Estates Residential Development – Morgantown, WV
- Cheat Landing Residential Development – Morgantown, WV
- Churchhill Village Complex – Morgantown, WV
- Trinity Christian School Football Field – Morgantown, WV
- Morgantown Technical Services Industrial Expansion – Mt. Morris, PA
- WVU Beechhurst Parking Lot – Morgantown, WV
- Numerous Marcellus Well Pad Sites for Various Clients – Northern WV

Construction Monitoring

Project Manager/Engineer involved with and/or responsible for construction observation/testing on numerous construction projects. These projects routinely involved earthwork testing utilizing a nuclear density gauge and other test methods during earthwork placement and compaction. Many projects also included concrete testing including slump, compressive strength, air entrainment and/or floor flatness testing. The following is a summary of projects involving construction observation and testing:

- Sunnyside Commons Student Housing Project – Morgantown, WV
- Family Dollar Store, Smithfield, PA
- University Place Parking Garage – Morgantown, WV
- Church Hill Village Housing Project – Morgantown, WV
- Mills Wetzel #3 Well Pad, Wetzel County, WV
- Shupbach Ridge Road Landslide Repair, Wetzel County, WV
- Potts Landslide Repairs – Wetzel County, WV
- Pribble Tank Landslide Repair – Wetzel County, WV
- Potokczny Landslide Repair – Marion County, WV
- Tucker County Industrial Park – Tucker County, WV
- Pocahontas County Landfill Cell 3 Expansion – Pocahontas County, WV
- Disposal Services Landfill Expansion Area – Hurricane, WV
- Platinum Drive Urban Connector Landslide Repair – Bridgeport, WV

- Trinity Christian School Football Field – Morgantown, WV
- Kasson Elementary/Middle School Pyrite Remediation Project – Barbour County, WV
- City of Philippi Water Improvement Project – Barbour County, WV
- Mackey Wolfe Well Pad – Barbour County, WV
- Morgantown Technical Services Expansion – Mt. Morris, West Virginia
- Lakin Correctional Center – Wood County, WV
- Western Regional Jail – Cabell County, WV
- Merrick Creek Farm Commercial Development – Cabell County, WV

Served as the Manager responsible for equipping and staffing a fully operational soils and concrete material testing laboratory to be used in support of construction observation projects. The laboratory became validated by the U.S. Army Corps of Engineers to perform approximately 45 ASTM test methods will under Mr. Sharp's direct supervision. Representative test methods included standard and modified proctors, Atterburg limits, grain size determination, aggregate sieve analysis, specific gravity, organic matter, lightweight particles, soil classification, compressive strength, and moisture content determinations. Establishment of the laboratory also included the preparation of a site specific quality systems manual in accordance with ASTM guidelines.

Sewer Lines and WWTPs

Project Manager/Engineer on numerous public utility projects such as sanitary sewer collection/treatment, as well as combined sewer/storm water improvements.

- Town of Marlinton CSO project
- City of Buckhannon Sanitary Sewer Extension
- City of Glenville Infiltration/Inflow Study for Sanitary System
- Pocahontas County PSD Geotechnical and Environmental Permitting Services for Wastewater Improvement Project

Water Lines, Water Storage Tanks, and Water Treatment Plants

Project Manager/Engineer on numerous public utility projects involving potable water supply. The projects oftentimes not only included the technical design but also included assistance with funding applications, preparation of technical specifications and construction documents, assistance with bidding documents, and construction observation/administration.

- City of Wellsburg Water Improvement Project (plant upgrade and line extension)
- City of Glenville Water Improvement Project
- Preston County PSD #2 Water Improvement Project
- City of Philippi Water Improvement Project
- City of Philippi Water Tank Upgrade Project
- Town of Mill Creek Water Improvement Project
- Town of Marlinton Water Plant Assessment
- Town of Huttonsville Water System Assessment

Morgantown Utility Board – Provide expert witness services on a routine basis.

Adam R. Krason, AIA, LEED AP, ALEP

ZMM ARCHITECTS & ENGINEERS

Role
Principal

Professional Registrations
Registered Architect (WV, OH, KY, VA)
LEED Accredited Professional
Accredited Learning Environment Professional
NCARB (55,984)
Construction Specifications Institute (CSI)
Construction Documents Technician (CDT)

Mr. Krason has served in the capacity of Architect and Project Manager for a variety of projects at ZMM. This experience includes Military, Educational (K-12 and Higher Education), Office, Justice (Courthouses, Correctional, Justice Centers), and Multi-Unit Residential projects. Mr. Krason's responsibilities include programming, design, documentation, coordination of the architectural and engineering team, as well as construction administration. Mr. Krason began his career in 1998, working on a variety of educational, commercial office, and correctional projects throughout Ohio, West Virginia, and North Carolina.

Mr. Krason has been an advocate of sustainable design in West Virginia, participating in a variety of sustainable design seminars throughout the State, and serving on the West Virginia School Building Authority Green Schools Sub-Committee. Recently, Mr. Krason helped coordinate the "Making the Business Case for Sustainability" conference at the University of Charleston that included speakers from Armstrong Industries, American Electric Power, CB Richard Ellis, and Interface Raise. Mr. Krason also assisted Habitat for Humanity Kanawha and Putnam County develop a commercial recycling program to fill a void in the sustainable design infrastructure in West Virginia. Mr. Krason has noted that, "I became a LEED Accredited Professional because I believe that good design has value, and the ability to impact our daily lives. Sustainable design showcases the value of design through demonstrated improvements in the performance of the students and employees who occupy our buildings." In addition to his design and project management responsibilities, Mr. Krason serves on the Board of Directors and is responsible for business development at ZMM.

Project Experience

Charleston Civic Center, Charleston, WV
Mr. Krason is serving as Principal-in-Charge of the expansion and renovation to the Charleston Civic Center. The $75M, 283,000 SF design-build project is being completed as a

Education
Bachelor of Architecture, The Catholic University of America, 1998

Bachelor of Civil Engineering, The Catholic University of America, 1997

Employment History
2007 - Present, Principal, ZMM
2007 - Present, Board of Directors, ZMM
2003 - Present, Architect, Project Manager, ZMM
1998 - 2003, Architect, Project Manager, Charleston Area Architectural Firm

Civic Affiliations
- American Institute of Architects, Member
- Habitat for Humanity Kanawha & Putnam County, Board of Directors 2011 - 2014
- WV Qualification Based Selections Council, President, 2012/2013
- Leadership WV 2010 - 2012
- Charleston Rotary
- West Side Main Street, Board of Directors 2008 - 2014
- City of Charleston Land Trust 2008 - 2014

collaboration with tvsdesign and BBL Carlton. Mr. Krason is responsible for the overall management of the design team, coordination with the client, and also has input critical project management decisions. The design commenced in the spring of 2015, and construction is scheduled for completion in 2018.

State Office Building #5, 10th Floor Renovation (Office of Technology), Charleston, WV
Mr. Krason led an architectural and engineering team that completed a detailed assessment of State Office Buildings 5, 6, & 7. Once the assessment was complete, ZMM had the opportunity to implement the proposed improvements on the 10th Floor of State Office Building #5 for the Office of Technology. The renovations, aiming for LEED-CI Certification, re-oriented the layout by drawing all private offices into the building core, providing access to daylight and views for all employees. The design also utilized acoustical ceiling clouds and bulkheads to maximize the acoustical performance, while also increasing the volume of the space.

Joint Interagency Training & Education Center (WVARNG), Kingwood, WV Mr. Krason was responsible for the preliminary programming, and participated in the schematic design of the 180,000 SF addition to the Regional Training Institute at Camp Dawson. Mr. Krason was also responsible for managing the production effort for the billeting (hotel) expansion, which increased the total billeting capacity at the JITEC to 600 rooms. This project received LEED Gold Certification.

Morgantown Readiness Center (WVARNG), Morgantown, WV
Mr. Krason was the project architect on the new Morgantown Readiness Center. This facility is a unique due to its location on an abandoned airport runway at the Morgantown Municipal Airport. The 54,000 SF Readiness Center occupies a 35-acre tract at the airport. This center supports traditional military functions including the 1-201st Field Artillery. A significant portion of the Morgantown Readiness Center supports the 249th Army Band. The Readiness Center contains a performance hall, pre-function spaces, as well as a variety of training and rehearsal areas.

Construction and Facilities Management Office Expansion (WVARNG), Charleston, WV
Mr. Krason was responsible for the programming, architectural design, and project management of the office expansion. The project included the renovation and addition to an existing pre-engineered metal building. The design, which was honored with a 2009 AIA Merit Award, focused the client's resources on a new entry and corridor that separated the existing office space from the addition.

Wood County Justice Center, Parkersburg, WV
Mr. Krason was the Project Manager for this adaptive reuse project. The existing 32,000 SF building creates a new Magistrate Court and Sheriff's Department. The justice center is LEED Silver Certified.

Tucker County Courthouse Annex, Parsons, WV
Mr. Krason was the Project Architect for the courthouse annex addition in Parsons, WV. The Annex is a 4-story, 21,000 Square Foot building that is adjacent to the Tucker County Courthouse. The annex will house spaces for the Circuit Court, Circuit Clerk, Family Court, Magistrate Court, Prosecuting Attorney, County Commission, County Clerk, Community Corrections, and Probation Office.

Participated on the team that won the following awards and acknowledgements:
2016 WV AIA Merit Award *Christ Church United Methodist, Charleston, WV*
2015 WV AIA Merit Award *Edgewood Elementary School, Charleston, WV*
2014 WV AIA Merit Award *Girl Scouts of Black Diamond Council, Charleston, WV*
2011 WV AIA Honor Award *Joint Interagency Training and Education Center (JITEC),* Kingwood, WV
2011 AIA Honor Award *State Office Building #5, 10th Floor Renovation,* Charleston, WV
2009 AIA Merit Award *WVARNG Construction and Facilities Management Office*, Charleston, WV

Robert Doeffinger, PE

ZMM ARCHITECTS & ENGINEERS

Role
Engineering Principal

Professional Registrations
Professional Engineer (WV, VA, PA, OH, TN, KY, NY, NH, ME, NC, SC, FL, NJ, GA)

As ZMM's Principal Engineer, Mr. Doeffinger is in charge of the engineering disciplines, it is his responsibility to ensure that the mechanical and electrical engineering components of ZMM's design are coordinated and integrated into the final product.

After graduate school in Architectural Engineering, Mr. Doeffinger joined ZMM. He has over 35 years design experience in mechanical and electrical systems for buildings. He has a broad range of engineering experience in education, industrial and manufacturing facilities, large retail, correctional and jails, office buildings, and military facilities.

Mr. Doeffinger is responsible for new design and retrofit of chilled water systems for all building types including large regional shopping malls. He is involved daily with the firm's selection of appropriate systems for all building types and performs life-cycle cost analysis and energy studies.

Mr. Doeffinger is a member of the American Society of Heating, Ventilation and Air-Conditioning Engineers. He is the current national Chairman of the Technical Committee on Heating and Air-Conditioning Load Calculation. He is involved in writing the National Standard on the Method of Calculation, which will shape the nature of the future building energy use for the nation.

Project Experience

State Office Buildings #5, 10th Floor Charleston, WV
Mr. Doeffinger was the Project Engineer for this renovation project The renovation of the tenth floor of State Office Building #5 on the State of West Virginia Capitol Campus was recently completed for the Office of Technology. The renovation was designed to meet the United States Green Building Council's LEED for Commercial Interiors standard. The renovations also include a low profile cable management system which maximizes the flexibility of the space. To commence the project, ZMM conducted a detailed investigation of State Office Buildings 5, 6, & 7, which included recommendations for improvement of the facilities. The renovation of the 10th floor of Building #5 was the first major interior renovation project that responded to the recommendations.

Education
Master of Science Architectural Engineering, Pennsylvania State University, 1976

Bachelor of Science Mechanical Engineering, West Virginia University, 1973

Employment History
2005 - Present, President, ZMM
1976 - 2005, Vice President and Engineering Principal, ZMM

Civic Affiliations
- ASHRAE – Member of the Technical Committee Load Calculations Data and Procedures for 15 years, serving as chairman. Presently Chairman of the Research Subcommittee
- Advisory Board for the Department of Electrical Engineering Technology, Bridgemont Community and Technical College
- City of Pt Pleasant, WV – 2nd Ward Councilman for 20 years

West Virginia Capitol Complex - Buildings #5, 6, & 7, Charleston, WV Mr. Doeffinger was the Project Engineer for the in-depth analysis of Buildings #5,6,& 7 at the State Capitol Campus. The study included the preparation of as-built plans, as well as an analysis of all building systems, including: Life Safety; Vertical Transportation; Mechanical; Electrical; Data; Façade; Structure; and Roofing. The analysis also included a study related to potential hazardous materials in the facility.

Bridgemont (BridgeValley) Community and Technical College Davis Hall Renovation, Montgomery, WV Mr. Doeffinger led an architectural and engineering investigation into the condition of Davis Hall to help Bridgemont Community and Technical College to develop a scope for the current renovation project, as well as a plan to undertake deferred maintenance at the facility. The project scope included remedying several life safety deficiencies, as well as improvements to the building envelope.

West Virginia Army National Guard, Joint Interagency Training & Education Center, Camp Dawson, WV Mr. Doeffinger was responsible for the mechanical engineering design of the 600 room billeting expansion to the Regional Training Institute at Camp Dawson. The project is aiming for LEED Silver Certification. The project is served by a 4 - pipe hot and chilled water system with an energy recovery ventilation system.

West Virginia Research, Education, and Technology – Building 704, South Charleston WV Mr. Doeffinger is the engineering principal-in-charge of preparing a life safety analysis of the building as well as design services to improve the exterior façade of Building 704 at the WV Research, Education, and Technology Park. Building 704 had previously been utilized as a campus maintenance facility by Union Carbide and DOW Chemical. Bridgemont began utilizing the facilities for instruction in the Spring of 2011.

West Virginia Regional Technology Park (WVRTP) - Building 740, South Charleston WV Mr. Doeffinger is the engineering principal-in-charge of the new Steam Plant for Building 740. This project involves designing and constructing the Interim Steam Heating System throughout Building 740.

NGK Oxygen Sensor and Spark Plug Plant, Sissonville, WV Mr. Doeffinger was in charge of engineering design of the 250,000 SF NGK facility. The most recent 130,000 SF expansion moved NGK's spark plug production for the west coast to West Virginia. For both the oxygen sensor plant and spark plug plant Mr. Doeffinger designed a cycle water system for the manufacturing equipment.

West Virginia Regional Jails, Mr. Doeffinger was the Project Engineer on ten West Virginia Regional Jails. In 2009 he was responsible for the HVAC renovation on four regional jails, including the replacement of rooftop HVAC units and Building Automation Systems.

The Plaza at King of Prussia, Pittsburgh, PA One of the largest retail centers in the east. Mr. Doeffinger has performed engineering services for the past 20 years. The project consists of a 5,000 -ton chilled water plant and 1,500,000 cfm variable volume system for tenants and constant volume air system for common areas and an engineered smoke control system. The most recent project is a 2011, 100,000 square foot expansion of tenant spaces, a renovation of the food court, and a 1,250-ton chiller addition to the central chilled water plant.

The Boulevard at 2412, Charleston, WV Mr. Doeffinger was on the design team for the proposed Kanawha Boulevard Condominium project. The sixty unit project, located in the East End Historic District, included a design that increased in height as it stepped back from the Kanawha River, providing the opportunity for a series of outdoor living areas, while also respecting the massing of the adjacent residences in the Historic District.

David E. Ferguson, AIA, REFP

ZMM ARCHITECTS & ENGINEERS

Role
Principal

Professional Registrations
Registered Architect (WV, OH)
Recognized Educational Facility Planner (REFP)

Mr. Ferguson has served in the capacity of Architect, Project Manager, and Principal in Charge for a variety of projects at ZMM. This experience includes Educational (PK-12, Vocational and Higher Education), Retail, Corporate Office, Industrial, Military, Medical Office Facilities, General Healthcare Hospital and Psychiatric Hospital Projects. Mr. Ferguson's responsibilities include programming, design, documentation, architectural/engineering coordination and construction administration.

Mr. Ferguson began his career at ZMM in 1984 working on a variety of retail, educational and military projects throughout West Virginia, Pennsylvania, Ohio, Virginia, Maryland, New York, North Carolina, South Carolina, Florida, and Washington DC. In 1996 Mr. Ferguson expanded his expertise into the Healthcare and Industrial and Corporate Office facilities and since then has led the effort at ZMM in Educational Design. Mr. Ferguson is a Recognized Educational Facility Professional (REFP) and has been involved in planning, designing and the construction of over 90 educational facilities in West Virginia. As the architect for the first "green" school building in West Virginia Mr. Ferguson has been an advocate for sustainable design and was involved starting the first US Green Building Chapter in West Virginia.

Mr. Ferguson has also participated in developing West Virginia Department of Education's Policy 6200 *Handbook on Planning School Facilities* and the West Virginia School Building Authority's *Handbook of Quality and Performance Standards*. In addition to Mr. Ferguson's project management responsibilities, as a principal of the firm he has corporate administrative duties and serves on the Board of Directors.

Project Experience
Southside Elementary and Huntington Middle School, Huntington, WV Mr. Ferguson led the programming and design effort on this 156,000 SF facility. This project encompasses all phases of construction; demolition, major renovation and new construction. The original historic 26,000 SF three story school building was preserved and the remaining less than adequate facility was strategically removed

Education
Bachelor of Science; Industrial Technology/Architectural Design; West Virginia State University; 1979

Employment History
2007 - Present, Vice President, Secretary/Treasurer, ZMM
2002 - 2007, Vice President, ZMM
2001 - Present, Board of Directors, ZMM
1996 - Present, Architect, Project Manager, ZMM
1984 -1996, Designer, ZMM

Civic Affiliations
- West Virginia Chapter, American Institute of Architects, President
- West Virginia Chapter, American Institute of Architects, Board Director
- American Institute of Architects, Member
- Member, Council of Educational Facility Planners International (CEFPI)
- Recognized Educational Facility Planner (REFP) by the CEFPI
- Professional Member, US Green Building Council
- High School Mentoring/Job Shadowing Program for 6 County School Systems
- WV AIA IDP Program Mentor/Advisor

to accommodate the new addition. The existing facility was completely renovated and brought up to new construction standards to blend with the new addition. The project consisted of two distinct school facilities existing on the same piece of property. The new construction blends seamlessly with the older historic structure.

Explorer Academy, Huntington, WV Mr. Ferguson is currently the Project Manager/Architect on the this new Expeditionary Learning Incubator School. The new Academy will be a consolidation of Peyton Elementary and Geneva Kent Elementary in the east end of Huntington. The schools will be combined and housed in the former Beverly Hills Middle School facility that will be remodeled to fit the mold of the Expeditionary Learning model. The curriculum for the program is very hands on, and is a real-world way of learning. Students will be working a lot with community partners, people who are experts in their fields. The students learn by conducting learning expeditions eather than sitting in a classom with one subject being taught as a time.

Huntington East Middle School, Huntington, WV Mr. Ferguson is currently responsible for the programming, design, and project management for the new 800 student, 94,000 SF facility. This is projected to be the first LEED Silver Middle School in West Virginia and encompasses the latest in technology and distance learning within the classroom. The building will be used as a teaching tool along with large interactive monitors throughout the building. Students will be able to learn how the building operates through hands on learning and monitoring the building systems.

Hacker Valley PK-8 School, Hacker Valley, WV Mr. Ferguson was responsible for the programming and design effort for this facility. This 65 student, 31,000 SF school was a ground breaking facility for the county, West Virginia School Building Authority and the WV Department of Education. The project didn't fit within any standard guidelines or protocol for a new school. Mr. Ferguson was instrumental in developing new guidelines for schools of this size and grade level configurations. The design of this facility is also the recipient of the 2010 WV AIA Honor Award.

Lincoln County High School, Hamlin, WV Mr. Ferguson was responsible for the programming and design effort for this one-of-a-kind facility. This 800 student, 217,000 SF school was a ground breaking facility for the county, West Virginia School Building Authority and the WV Department of Education. This facility was the first school in West Virginia to incorporate "green" design principals. The school was the first school east of the Mississippi River to encompass a fully comprehensive High School, Vocational School, Health Clinic (open 12 months a year), and Community College within one building. This facility is also the proud recipient of the 2007 WV AIA Honor Award.

Cabell County Bond Program: Mr. Ferguson assisted Cabell County in developing budgets, project scopes and passing the largest bond program in West Virginia. This encompassed four projects and with additional funding from the West Virginia School Building Authority exceeded $72 million dollars. As Principal, Mr. Ferguson led the programming and design effort on all four facilities.

Wayne County Bond Program: Mr. Ferguson assisted Wayne County Schools in passing an $18,000,000. The passage of the bond will create a New Crum PK-8 School, a New Ceredo-Kenova Elementary School and Additions and Renovations to Wayne High School. The overall process involved community meetings, establishing goals and priorities, creating overall budgets and a project scope that the citizens would support. ZMM assisted Wayne County Schools with distributing information, working with the bond committee and Bond Council to establish the actual Bond Call and assisting with public awareness throughout the county. ZMM worked facilitated meetings with the WV School building Authority and Wayne County Schools to create an overall project Budget of $42,200,000.

Participated on the team that won the following awards and acknowledgements:
2016 WV AIA Merit Award *Gauley River Elementary School, Craigsville, WV*
2015 WV AIA Merit Award *Kenna Elementary School, Kenna, WV*
2014 WV AIA Merit Award *Southern WV Community & Technical College, Williamson, WV*
2014 WV AIA Merit Award *Huntington East Middle School, Cabell County Schools, Huntington, WV*
2010 WV AIA Honor Award *Hacker Valley PK-8 School*, Webster County Schools, Hacker Valley, WV

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.

Dana Burns, Vice President
(Name, Title)

Dana Burns, Vice President
(Printed Name and Title)

7012 MacCorkle Avenue, SE, Charleston, WV 25304
(Address)

304-342-1400/ (304) 343-9031
(Phone Number) / (Fax Number)

dlburns@potesta.com
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Potesta & Associates, Inc.
(Company)

Dana L. Burns
(Authorized Signature) (Representative Name, Title)

Dana Burns, Vice President
(Printed Name and Title of Authorized Representative)

3/22/17
(Date)

304-342-1400/ 304-343-9031
(Phone Number) (Fax Number)

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

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

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

DEFINITIONS:

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

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

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

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Potesta & Associates, Inc.

Authorized Signature: Dana L. Burns Date: 3/22/17

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 22 day of March, 2017

My Commission expires Feb. 14, 2024

AFFIX SEAL HERE

NOTARY PUBLIC Rhonda L Henson

OFFICIAL SEAL
Rhonda L. Henson
Notary Public
State of West Virginia
My Commission Expires
February 14, 2024
1978 Wolf Pen Drive
Charleston, WV 25312

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: 0603 ADJ1700000005

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)

[x] Addendum No. 1	[ ] Addendum No. 6
[x] Addendum No. 2	[ ] Addendum No. 7
[x] Addendum No. 3	[ ] Addendum No. 8
[x] 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.

Potesta & Associates, Inc.
Company

Dana L. Burns
Authorized Signature

3/21/17
Date

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