



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

**Request for
 Quotation**

RFQ NUMBER
DEP14622

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
**CHUCK BOWMAN
 304-558-2157**

VENDOR

**RFQ COPY
 TYPE NAME/ADDRESS HERE**
Tetra Tech NUS, Inc.
Foster Plaza 7
661 Andersen Drive
Pittsburgh, PA 15220

BUYER

**ENVIRONMENTAL PROTECTION
 DEPARTMENT OF
 OFFICE OF AML&R
 601 57TH STREET SE
 CHARLESTON, WV
 25304 304-926-0499**

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
04/02/2009				

BID OPENING DATE: 05/07/2009 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-29	NA	NA
<p>PINES COUNTRY CLUB (PONDS) SUBS. DESIGN</p> <p>EXPRESSION OF INTEREST</p> <p>THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING EXPRESSIONS OF INTEREST FOR PROFESSIONAL ENGINEERING DESIGN SERVICES AND CONSTRUCTION MONITORING SERVICES AT THE PINES COUNTRY CLUB (PONDS) SUBS. PROJECT IN MONONGALIA COUNTY, WV, PER THE FOLLOWING BID REQUIREMENTS AND ATTACHED SPECIFICATIONS.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID AND IS TERMINATED WITHOUT FURTHER ORDER.</p>						
<p>Point of Contact & Telephone Number:</p> <p>Mr. Thomas A. Gray, PE T: 412.921.8794 F: 412.921.4040 email: tom.gray@tetrattech.com</p>						<p>RECEIVED</p> <p>2009 MAY -7 A 10: 03</p> <p>PURCHASING DIVISION STATE OF WV</p>
<p>* ***** THIS IS THE END OF RFQ DEP14622 ***** TOTAL:</p>						NA

SEE REVERSE SIDE FOR TERMS AND CONDITIONS		
SIGNATURE <i>Mark D. Sperry</i>	TELEPHONE 412-921-8916	DATE May 7, 2009
TITLE Pittsburgh Operations Manager	FEIN 95-4660169	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



Mark Speranza, PE
Pittsburgh Operations Manager

May 6, 2009

Mr. Chuck Bowman, Buyer
State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Subject: **RFQ# DEP14622**
Expression of Interest (EOI) for Professional Engineering Design Services and Construction Monitoring Services at the Pines Country Club (Ponds) Subsidence Project in Monongalia County, West Virginia; Tetra Tech Vendor ID : 317151437

Dear Mr. Bowman:

Tetra Tech NUS, Inc. (Tetra Tech) is pleased to present the State of West Virginia, Department of Administration Purchasing Division (State) and the West Virginia Department of Environmental Protection (WVDEP), Office of Abandoned Mine Lands & Reclamation (AML) our Expression of Interest (EOI) to provide engineering and construction monitoring services for the Pines Country Club (Ponds) Subsidence project. This submittal includes one original plus one copy of our EOI. As requested, the EOI contains a concise summary of Tetra Tech's corporate history and the experience, qualifications, and performance data of our staff as summarized in a completed "AML Consultant Confidential Qualification Questionnaire" (CCQQ) and the "AML and Related Project Experience Matrix" (RPEM).

Tetra Tech specializes in the mining related application of engineering and environmental consulting, reclamation, geotechnical services, and water management. Our firm has been ranked the Number 1 firm in water management and supply by the *Engineering News Record* for the past eight years.

Our AML specific experience includes projects located throughout the United States and South America. Our proposed key personnel, Thomas Gray, PE and Allan Berenbrok, PE have a combined 64 years of engineering experience with over 36 associated with mining and AML related projects, pond construction and water distribution systems. Both have experience with WV DEP projects.

Our proposed project manager has completed a project similar to the Pines Country Club project in West Virginia. He was the project manager for the design of a golf course pond for the Guyan Country Club in Huntington, WV. This pond was constructed between the tee and fairway and was used to supply irrigation water to the course.



Mr. Chuck Bowman, Buyer
May 6, 2009 - Page 2 of 2

Supplementing Tetra Tech will be Triad Engineering, Inc. from their Morgantown, WV office. Triad is experienced with WV AML projects and will support Tetra Tech in the areas of surveying, mapping, and geotechnical drilling.

Tetra Tech appreciates the opportunity to submit our qualifications to you for this project. If you have any questions about the information provided, please contact Mr. Thomas Gray at 412.921.8794.

Very Truly Yours,

A handwritten signature in black ink that reads 'Mark P. Speranza'.

Mark P. Speranza, PE
Pittsburgh Operations Manager

A handwritten signature in black ink that reads 'Tom'.

Thomas A. Gray, PE
Energy and Natural Resources Group Manager

Enclosures

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

PROJECT NAME: Design country club (ponds) Subsidence
 DATE (DAY, MONTH, YEAR): 05/07/09
 FEIN # 95-4660169
 DUNS # 04-967-1456

1. FIRM NAME: Tetra Tech NUS, Inc. - Pittsburgh, PA
 2. HOME OFFICE BUSINESS ADDRESS: Foster Plaza 7 - 661 Andersen Drive Pittsburgh, PA 15220-2745
 3. FORMER FIRM NAME: NA

4. HOME OFFICE TELEPHONE: 412-921-7090
 5. ESTABLISHED (YEAR): 1966
 6. TYPE OWNERSHIP: Individual Corporation
 Partnership Joint-Venture YES NO
 6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) YES NO

7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE
 Foster Plaza 7 - 661 Andersen Drive Pittsburgh, PA 15220-2745/412-921-7090/Tom Gray/20

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM: Mark Speranza, PE - Operations Manager
 8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS: Mark Perry, PE - Regional Manager (Mining Engineer) 412-921-7090

9. PERSONNEL BY DISCIPLINE

32 ADMINISTRATIVE ARCHITECTS	2 ECOLOGISTS	LANDSCAPE ARCHITECTS	1 STRUCTURAL ENGINEERS
4 BIOLOGIST	1 ELECTRICAL ENGINEERS	3 MECHANICAL ENGINEERS	SURVEYORS
8 CADD OPERATORS	10 ENVIRONMENTALISTS	3 MINING ENGINEERS	TRAFFIC ENGINEERS
12 CHEMICAL ENGINEERS	1 ESTIMATORS	PHOTOGRAMMETRISTS	45 OTHER
19 CIVIL ENGINEERS	15 GEOLOGISTS	PLANNERS: URBAN/REGIONAL	
3 CONSTRUCTION INSPECTORS	HISTORIANS	2 SANITARY ENGINEERS	
DESIGNERS	4 HYDROLOGISTS	1 SOILS ENGINEERS SPECIFICATION WRITERS	
DRAFTSMEN			166 TOTAL PERSONNEL

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

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

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

<p>NAME AND ADDRESS: Triad Engineering Inc. 219 Hartman Run Road Morgantown, WV 26505</p>	<p>SPECIALTY: Surveying, Mapping, Geotechnical Drilling, and Sampling</p>	<p>WORKED WITH BEFORE <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
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<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No</p>

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

YES **Description and Number of Projects:** Tetra Tech staff and consultants have completed over 100 abandoned mine land projects. The listing in Attachment C is only a partial listing. Thomas Gray has been working on abandoned mine reclamation projects for the past 21 years, many in West Virginia. Tetra Tech has an office in Charleston, WV that has worked for WVDEP.

NO

B. Is your firm experienced in Soil Analysis?

YES **Description and Number of Projects:** Tetra Tech has conducted thousands of soil investigations worldwide that included sampling and analysis. Along with this site work we have provided thousands of reports presenting the results of the investigations. We have extensive specialized experience and technical competence in providing soil sampling and analysis services, including performing more than 6,000 environmental site characterizations, including mining sites, and more than 1000 geotechnical investigations. Tetra Tech has trained and experienced filed sampling crews.

NO

C. Is your firm experienced in hydrology and hydraulics?

YES **Description and Number of Projects:** Tetra Tech has over three decades of corporate experience in hydrology and hydraulics. Our expertise and knowledge in evaluating hydrologic systems is applied to specific water resource project types including; water resource and flood damage assessment, flood control design (including channels, levees, detention basins and bank protection, hydraulic structure designs, erosion/sedimentation studies, stream restoration and wetland design projects, dam and levee safety evaluations, reservoir operation/optimization studies, flood-control and floodplain management studies and mapping, development of flood warning systems, dam break flood studies and contingency planning, stormwater drainage design, surface and groundwater supply analysis. The basis of these hydrologic studies is the application of HEC software such as; **HEC-HMS, Geohms, HECFFA, HEC-SSP, HEC-DSSVue, HEC-Ressim, CWMS and legacy software such as HEC-1, HEC-5, HEC-DSS, and COED.** We have done thousands of projects as indicated by our ranking as the Number One consultant in water-related projects by the *Engineering News Record*.

NO

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

YES Description and Number of Projects

NO Tetra Tech regularly subcontracts these activities.

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

YES Description and Number of Projects: Tetra Tech has extensive expertise modeling, designing, and building reliable, save and cost-effective water transmission and distribution systems. Our experience encompasses transmission and distribution systems, including large and small diameter water mains, distribution piping, booster pumping stations, storage tanks, and metering facilities. Tetra Tech has performed domestic water line design projects nationwide for the hundreds of municipalities and water authorities. We complete at least 100 related projects each year. Our staff has experience with evaluating aquifer degradation due to mining projects. Mr. Gray has evaluated the hydrogeology of at least ten mining sites and their impacts from surface and underground mining both active and abandoned.

NO

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

YES Description and Number of Projects: Tetra Tech's Pittsburgh office is currently involved with four acid mine drainage projects. The Gladden discharge project is a passive treatment design for an acidic discharge that averages over 900 gpm. A mine pump station is currently being designed at an acid mine drainage treatment plant. Tetra Tech is also consulting on a sodium hydroxide treatment plant design for an acidic discharge that averages about 30 gpm. Tetra Tech is preparing an AML/AMD passive treatment design for a 20-acre site located in north central Pennsylvania. Our current staff has also been involved with many other AMD evaluation projects and abatement design while working for other consultants.

NO

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

<p>NAME & TITLE (Last, First, Middle Int.)</p> <p>Gray, PE, Thomas A. Group Manager - Energy and Natural Resources</p>	<p>YEARS OF AML DESIGN EXPERIENCE: 22</p> <p>YEARS OF AML RELATED DESIGN EXPERIENCE: 36</p> <p>YEARS OF EXPERIENCE</p>	<p>YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 16</p>
<p>Brief Explanation of Responsibilities:</p> <p>Mr. Gray is an experienced mining engineer and has been involved with abandoned mine reclamation for the past 22 years. He is currently working on the reclamation design of Fisher Run and Tunnelton portals in West Virginia, Paint Branch Mine Portal Closure in West Virginia and the Gladden Mine Discharge Mitigation in western Pennsylvania. Mr. Gray has managed design projects in West Virginia that include irrigation pond design at the Guyan Country Club near Huntington, West Virginia, numerous subsidence projects, water supply extension project in Logan County, evaluating construction documents for the Gauley River and Heizer/Manila Creek water line extension, and the design of a water supply system to service approximately 800 residents of the Mill Creek-Isom Community along Godby Branch watershed. He also managed the design of approximately two miles of a pump and overland pipeline system and provided designs and specifications for a half mile overland pipeline, including a bridge crossing for a utility in Greene County, PA and the design and construction inspection of a 2.5-mile water pipeline and pump station project for Cambria Township, PA and for the Colver Power Plant.</p>		
<p>EDUCATION (Degree, Year, Specialization) BS, 1973, Mining Engineering Masters Business Administration, 1977</p> <p>REGISTRATION (Type, Year, State) Professional Engineer 26978-E, 1978, Pennsylvania Professional Engineer 17048, 1989, Maryland Professional Engineer 11628, 1980, Virginia Professional Engineer 10523, 1988, West Virginia Professional Engineer 73686, 2009, Ohio</p> <p>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Society of Mining Engineers(SME) - Pittsburgh section Distinguished Member, Society of American Military Engineers, National Distinguished Member Class of 2009</p>		

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE	
Berenbrok, PE, Allan R. Senior Project Manager	YEARS OF AML DESIGN EXPERIENCE: 1	YEARS OF AML RELATED DESIGN EXPERIENCE: 1
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 28

Brief Explanation of Responsibilities:

Mr. Berenbrok has 28 years of municipal utility design, site development, construction specifications, cost estimating and construction management experience that includes small diameter water lines, booster stations, site grading, storm water management pond design, hydrology and hydraulics. Mr. Berenbrok has experience in the hydrology analysis to determine the size and discharge requirements for the design of storm water basins, embankment construction for a pond and breach analysis to classify a basin / dam for permitting. His has experience in water line design and water booster pumps for municipal water systems various public systems throughout western Pennsylvania and North Carolina. He is currently working on two AML project for the WVDEP: the detailed design drawings and construction specifications for the Fisher Run and Tunnelton Mine Portal closure for the West Va DEP, Paint Branch Mine Portal Closure.

EDUCATION (Degree, Year, Specialization) **BS, 1980, Civil Engineering
MS, 1984, Systems Management**

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:
none

REGISTRATION (Type, Year, State)
Professional Engineer 037262-E, 1988 Pennsylvania

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE	
O'Connell, PE, Michael D. Senior Project Manager	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 10

Brief Explanation of Responsibilities:

Mr. O'Connell has 17 years of design and construction experience with public and private sector clients in the areas of storm water management, waterlines, land development, construction specifications, cost estimating, landscaping and irrigation. His experience with improvements to recreational facilities in at public school athletic fields and surrounding common areas includes site grading, landscaping and irrigation systems design and construction. He has design experience with public water supply system design of piping, hydrant location, pumps and booster station construction drawings and specifications. His experience includes the preparation of necessary local permits for grading and erosion and sediment control.

EDUCATION (Degree, Year, Specialization) **BS, 1972, Civil Engineer**

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

Professional Engineer, 1999, New York

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

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

Brief Explanation of Responsibilities:

EDUCATION (Degree, Year, Specialization)
 MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
 REGISTRATION (Type, Year, State) **None**

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

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

Brief Explanation of Responsibilities:

EDUCATION (Degree, Year, Specialization)
 MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
 REGISTRATION (Type, Year, State)

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

AutoCAD (2008), KYPIPE 2006, TR-55, STABLE5, HEC-HMS, GeoHMS, HECFFA, HEC-SSP, HEC-DSSVue, HEC-ResSim, CWMS and legacy software such as HEC-1, HEC-5, HEC-DSS, and COED.

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

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Gladden Mine Drainage; Passive Treatment Design; South Fayette Township, Allegheny County, PA	South Fayette Conservation Group 515 Millers Run Road Morgan, PA 15064	Investigation and passive treatment system design, including surveying, wetland delineation, H&H evaluation, plans and specifications	\$500,000	15%
Pump Station Design; Canterbury Mine; Apollo, PA	Murray Energy One Industrial Drive Wheeling, WV 26003	Design of floating pump station, including pump selection, power supply and pipeline	\$150,000	50%
Rock Springs Subsidence Mitigation Rock Springs, WY	Wyoming Dept of Environmental Quality, Abandoned Mined Lands Division, 122 West 25th St, Herschler Building Cheyenne 82002	Assessment of subsidence hazards within the City of Rock Springs where historic underground coal mining resulted in moderate to severe subsidence.	\$2,100,000	30%
Fisher Run and Tunnelton Portal Closure, Weston WV and Tunnelton, WV	WVDEP Division of Abandoned Mine Lands 105 S. Railroad Street Philippi, WV 26416	Design of mine portal closures and site grading for on private property to close several mine openings.	\$200,000	90%
Paint Branch Portal Closure, Paint Branch WV	WVDEP Division of Abandoned Mine Lands 116 Industrial Drive Oak Hill, WV 25901	Design of the closure of three mine portals by installing bat gates at the portal entrance	\$50,000	50%

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

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
Jonathan Run Acid Rock treatment plant design; Snowshoe, PA	Consulting	Penn DOT Clearfield, PA	December, 2008	\$130,000	Review of design and technically assist during the design process.

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

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
SWMU Closure Feasibility Study and Design including cover design for South End Landfill, New Martinsville, WV	Bayer Corporation State Route 2 New Martinsville, WV 26155	1,200,000	2004	NO
Mud Lake Reclamation involving slope regrading, revegetation, and stream relocation, Listerhill, AL	Alcoa Remediation Management, Inc. 201 Isabella Street Pittsburgh, PA 15212	650,000	2006	YES
East St Louis, Site Remediation Design and Oversight of waste removal and disposal. East St. Louis, IL	Alcoa Remediation Management, Inc. 201 Isabella Street Pittsburgh, PA 15212	250,000	2006	YES
Bauxite Residue Disposal Area seepage assessment and subsurface drainage collection system design and construction oversight, Hurricane Creek, Bauxite, AR	Alcoa Arkansas Reclamation 1401 Bauxite Cutoff Rd Bauxite, Arkansas 72015	500,000	2004	YES
Sherwin Dike Upgrade, collect soil samples, performed testing and analysis and grading plans associated with efforts to stabilize and heighten 3.5 mile dike, Corpus Christi, TX	Alcoa Remediation Management, Inc. 201 Isabella Street Pittsburgh, PA 15212	2,500,000	2006	YES

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

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
NA					

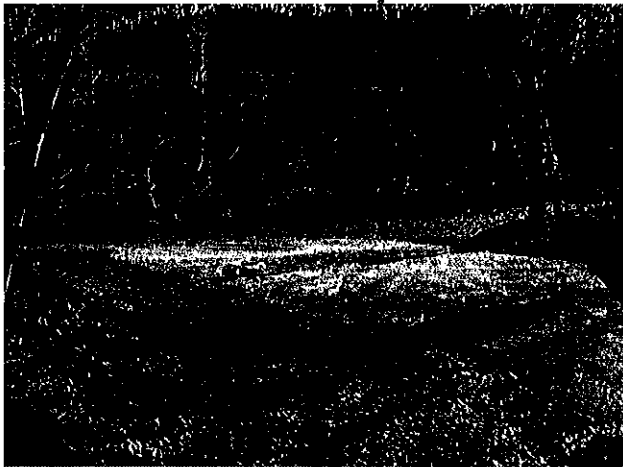
19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Abandoned Mine Lands Program.

20. The foregoing is a statement of facts.

Signature: Mark P. Speranza Title: Pittsburgh Operations Manager

Printed Name: Mark P. Speranza, PE

Date:



The South Fayette Conservation Group, in conjunction with the Pennsylvania Department of Environmental Protection (DEP) Bureau of Abandoned Mine Reclamation, retained Tetra Tech for the design of a passive acid mine drainage treatment system. Millers Run, a warm water fishery, flows into Chartiers Creek, also a warm water fishery. The abandoned mine portal discharges approximately 1,000 gallons per minute of acid mine drainage into Millers Run. With the aeration and mixing of the flow the pH rises and the iron oxide is precipitated out of the flow, resulting in several miles of iron oxide precipitation and low oxygenated water.

In support of the design, Tetra Tech surveyed the site and prepared a topographic map, installed monitoring wells to monitor the mine pool elevation, delineated wetlands, evaluated several alternative site configurations. One of the sites evaluated had an unstable highwall. Tetra Tech is currently conducting a geotechnical evaluation of the site, performing a hydrologic evaluation of the floodplain, and preparing the site layout and grading plan design. Tetra Tech is also preparing construction drawings, specifications, construction cost estimates and applicable Pennsylvania DEP permits.

Client Name
South Fayette Conservation Group

Project Highlights

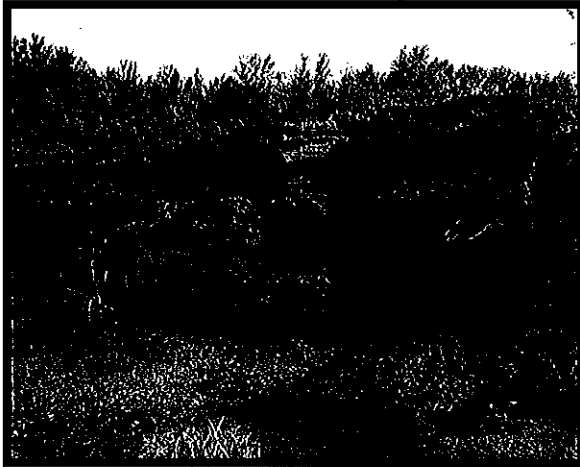
- Restore 5+ miles of stream
- Passive treatment of AMD
- Hydrologic investigation of flood plain
 - Prepared plans and specifications

Project Cost
\$1,000,000 (est.)

Completion Date
On-going

The design consists of the excavation of a 3-acre basin on private property adjacent to a four-lane highway, railroad right-of-way, and an adjacent property owner. The treatment will consist of a directional bore into the mine to allow gravity flow of the mine drainage into a limestone bed and into the 3-acre holding basin. The basin area will be over-excavated to remove the underlying coal bed. The basin will be constructed at a horizontal distance far enough away from the existing mine to prevent a blowout. The existing discharge will remain behind a small check dam to eliminate the discharge but will be used as an outlet control if the mine pool would rise. The basin will consist of three cells to increase holding time and allow for each cell to be isolated for the removal of iron oxide from the cell for commercial use. The basin will discharge through a riser structure into man-made wetland areas for additional treatment prior to flowing into Millers Run and ultimately Chartiers Creek.





Tetra Tech conducted an engineering evaluation of alternatives to restore reaches of Powderly Creek impacted by acid mine drainage (AMD). The creek had been impounded, choked with fine sediments, and buried by mine tailings. Tetra Tech collected soil, water, and aquatic biology samples to assess the aquatic and riparian habitat, and prepared a detailed HEC-RAS hydraulic model to help evaluate stream restoration alternatives.

Because impacts to stream flows, floodplains, bank and bed materials, and stream location had been severely impacted by coal mining activities, geomorphologic modeling was essential for the successful development of stable stream restoration designs.

Overland and in-stream sediment loads, hydraulics, bed forms, stream profile, impoundment and wetland impacts, and potential management practices were evaluated to fully describe site geomorphology with and without the restoration projects. Geomorphic resources included USACE documents such as EM 1110-2-4000, EM 1110-2-1418, ERDC-CHL TR-01-28, and the "WES Stream Investigation and "Streambank Stabilization Handbook."

Tetra Tech prepared restoration options including wetland improvements, wetland creation, stream restoration, stream channel relocation, development of floodplains that appropriately link to the restored stream, low head floodwalls, potential breaching of other low head dams, and creation of stormwater BMPs. Passive systems for treating acid mine drainage (AMD) were incorporated into the designs with treatment units located in the riparian corridor. The detailed designs of the selected alternative to restore the Powderly Creek watershed included a geomorphic evaluation, sediment load study, MCACES costs, construction documents, dam modifications, and passive AMD treatment systems.

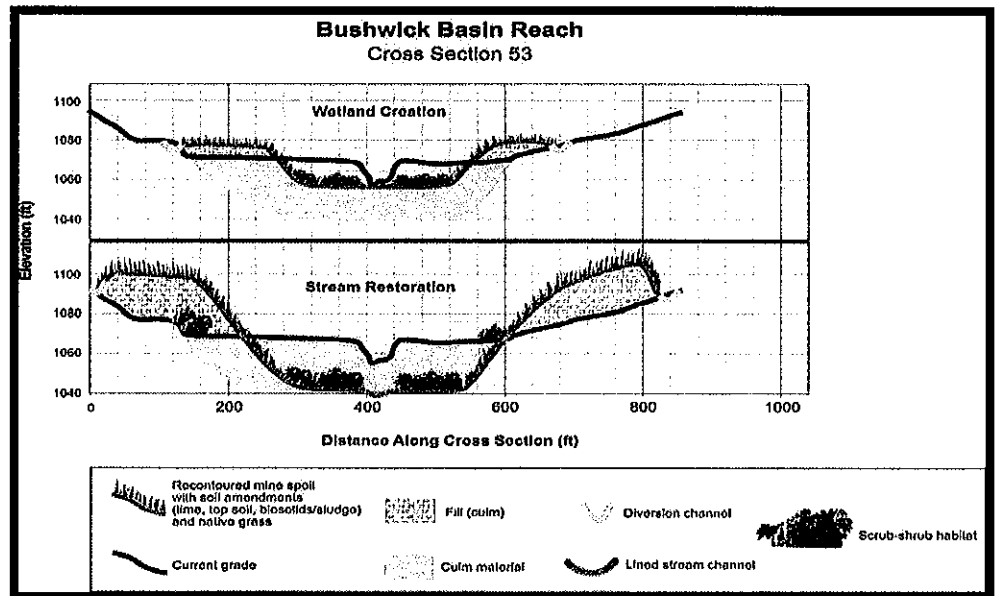
Client Name
Baltimore District U.S. Army Corps of Engineers

Project Highlights

- Geomorphic modeling and sediment load analysis
- HEC-RAS hydraulic modeling
 - Passive AMD treatment alternatives evaluated
- MCACES cost estimate and preparation of construction documents

Project Cost
\$335,000

Completion Date
2005





Before



Restored

By working together, representatives from government, private industry, and the public have developed and are implementing proactive and expedited watershed-based solutions to the environmental effects of historical mining and milling in the Bonanza Mining District.

Tetra Tech managed the project on behalf of the Bonanza Group and provided the necessary environmental science and engineering services to complete the site characterization, acquire necessary permits and authorizations, and implement response actions.

Client Name
ASARCO Incorporated

Project Highlights

- *Stream channel segment restored to stable meander pattern after removal of valley-fill tailings impoundment*
- *Numerous in-place closures of fluvially-deposited tailings*
- *Consolidation and capping of selected tailing deposits and impoundments*
- *Numerous stream bank stabilization measures*

Project Cost
Confidential

Completion Date
1999

Response actions include in-place and on-site tailings and mine waste consolidation and closure, storm water controls, stream rehabilitation and riparian zone enhancements, revegetation, control of acid mine drainage, and passive water treatment.

As part of the project, stream banks have been stabilized and riparian zones restored along approximately four miles of Kerber Creek impacted by historic tailing impoundments and fluvially deposited tailings. This stream rehabilitation work has included relocating a one-half mile long segment of the creek to a new, stable, meandering channel after removal of a valley-fill tailings impoundment.

Stream stabilization measures include placement of rock barbs, vortex weirs, log revetments, and riparian trees and shrubs. The riparian zone enhancements and revegetation of the areas have served to both stabilize stream banks and improve water quality.



Golfside Inc. Four Phase Condominium Subdivision Site Design St. Clair Township, Michigan



Golfside is a premium four-phase condominium subdivision melded into an 18-hole golf course of St. Clair Country Club. The Golfside site remained densely wooded and undeveloped for almost 50 years while the original privately owned nine-hole St. Clair Golf Club prospered. As course operating costs rose, the owners realized a need to increase membership and to construct nine additional holes. Golfside, Inc. contracted with Mathews & Associates to plan a nine-hole expansion of the 50-year old original course, utilizing surplus property. Mathews & Associates worked with the client to lay out the spectacular "back nine."

Tetra Tech was brought on to conceptualize and develop residential home sites situated within the site floodplain, wetland, and clay knolls. Project responsibilities included the four single-family subdivision phases and a 26-unit duplex condominium addition. Tetra Tech provided design and construction phase surveys and engineering services for the 102-lot four-phase project. Tetra Tech went on to design and develop a 26-unit multiple project.

Comprehensive project tasks for Tetra Tech included: providing concept layouts, utility and road design, coordination and approvals with Township and local and State regulatory agency approvals, public utility coordination, construction layout, survey, and preparation of Exhibit "B" Condominium documents.

The resulting project overcame poor soil conditions, wetland concerns, floodplain and severe drainage restrictions, and initial hesitation from local officials. The completed project has proven to be one of the finest high-end residential projects in St. Clair County. Homes are well blended into the golf course layout and provide homeowners the advantages that come with living "on the course." Tetra Tech has discussed the development of the remaining property to be developed.

Project Highlights:

- Responsibilities included four single-family subdivision phases and a 26-unit duplex condominium addition
- Design and construction phase surveys and engineering services for the 102-lot

Project Dates:

2002

Project Value:

\$200,000 (Design)

\$2,500,000 (Construction)

Reference:

Mr. Howard Conlin
Golfside, Inc.
2185 Vine Rd.
St. Clair, MI 48079
Phone (810) 329-2277



TETRA TECH

**Stonebridge Development Company
Planned Unit Development
Pittsfield Township, Michigan**



Project Highlights:

- 655-acre planned unit development including 711 single-family homes, condos, and townhouses with 18-hole championship golf course, paved roadways with curb and gutter, sanitary sewer, and water main
- Extensive use of ponds and wetlands for stormwater management

Reference:

Mr. Myron Serbay
Stonebridge Dev. Co.
680 KMS Place, Ste. 11
Ann Arbor, MI 48108
Phone (734) 994-5001

Tetra Tech has been a part of the Stonebridge team for over seven years. At completion, the development, located in Pittsfield Township, had over 700 residential units surrounding a championship golf course.

The scope of services for this project included topographic and boundary survey, project cost estimates, and preparation of the preliminary site plans, final site plans, street design, utilities design, construction drawings, and technical specifications. The project included incorporating several detention and retention areas into a complex overall drainage plan.

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

VENDOR OWING A DEBT TO THE STATE:

West Virginia Code §5A-3-10a provides that: 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 the debt owed is an amount greater than one thousand dollars in the aggregate.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:

If this is a solicitation for a public improvement construction contract, the vendor, by its signature below, affirms that it has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the *West Virginia Code*. The vendor must make said affirmation with its bid submission. Further, public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the *West Virginia Code* and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the *West Virginia Code* may take place before their work on the public improvement is begun.

ANTITRUST:

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

LICENSING:

Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:

The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.

Under penalty of law for false swearing (*West Virginia Code §61-5-3*), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

Vendor's Name: Tetra Tech NUS, Inc.

Authorized Signature: M. H. P. Spangola

Date: May 7, 2009

Appendix A

Resumes

THOMAS A. GRAY, P.E.
GROUP MANAGER – ENERGY AND NATURAL RESOURCES
PITTSBURGH, PENNSYLVANIA

EDUCATION: BS; Mining Engineering; the Pennsylvania State University; 1973
MBA; Business Administration; University of Pittsburgh; 1977

**CERTIFICATIONS/
REGISTRATIONS:** Professional Engineer Pennsylvania, 26978-E, 1978
Professional Engineer, Maryland, 17048, 1989
Professional Engineer, Virginia, 11628 1980
Professional Engineer, West Virginia, 10523 1988
Professional Engineer, Ohio, 73686, 2009

EXPERIENCE SUMMARY:

Mr. Gray has 36 years total years of professional experience. He is a technical expert in mining engineering, mine reclamation, coal ash disposal and utilization, watershed and ecosystem restoration, mine subsidence, acid mine drainage remediation , mine stabilization via grouting and abandoned mine fire mitigation.

Mr. Gray specializes in active and abandoned mining projects and with infrastructure projects that have mining related concerns. His project management responsibility has included construction, engineering, regulatory compliance, and research and development.

PROJECT EXPERIENCE:

Project Manager, Guyan Country Club, Huntington West Virginia, 1996. Project Manager for the design of a collection system and irrigation pond along a fairway at the Guyan Country Club.

Senior Project Manager, Consol Energy, Greene County, PA, 2005- 2007. Evaluated longwall mining subsidence and impacts to surface structures.

Senior Project Manager, Glenn Springs Holding, Inc. (subsidiary to Occidental Petroleum), Tire Hill, PA, 1999-2000. Designed a pilot passive treatment system including an anoxic limestone drain, sedimentation ponds, and wetlands to treat acid mine water from an underground coal mine. Performed construction monitoring and prepared as-built drawings.

Project Manager, West Virginia Division of Environmental Protection, Monongalia County, WV, 1994-1998. This research and demonstration project injected coal combustion byproduct based grout into 25 acres of abandoned mine workings to reduce the generation of acid mine drainage and to reduce subsidence potential.. Responsible for research and development investigation, construction plans and specifications, monitoring construction, and preparing a research report. Project sponsors included Allegheny Energy, the U.S. Department of Energy, Consol Inc. and the Electric Power Research Institute.

Project Advisor, West Virginia Division of Environmental Protection, Logan County, WV, 1994-1995. Prepared construction documents for a water supply extension project.

Project Advisor, West Virginia Division of Environmental Protection, Nicholas County, WV, 1995. Evaluated construction documents for the Gauley River and Heizer/Manila Creek water line extension projects.

Project Advisor, West Virginia Division of Environmental Protection, Chapmanville, Logan Count, and WV 1993-1994. Designed a water supply system to service approximately 800 residents of the Mill Creek-Isom Community along Godby Branch watershed.

Project Manager, Cambria Township Water Authority, in conjunction with Inter-Power/AIcon Partners, Colver, PA, 1990-1993. Responsible for designing and providing construction inspection for a 70-acre lake, 2.5-mile water pipeline, and pump station project. The system provides up to 1600 gpm of water for the Municipality of Cambria Township and for the Colver Power Plant. The Colver Plant is a 110 mw water-cooled facility.

Project Manager, New Warwick Mining Company, Greene County, PA, 1993. Evaluated the potential for mine water to migrate through geologic strata between two mines in different coal seams. Estimated when the filling mine pool in the recently abandoned Shannopin deep mine would flow into the overlying active mine through the mine floor.

Project Manager, Duquesne Light Company, Greene County, PA, 1991-1992. Designed approximately two miles of a pump and overland pipeline system and provided designs and specifications for a half mile overland pipeline, including a bridge crossing.

Mining Engineer, U.S. Steel Corporation, Greene County, PA, 1976. Planned and designed the mine water pumping system at the Robena Coal Mine using 19 pumps within the mine, several miles of pipeline, and discharging approximately two million gallons per day.

PROFESSIONAL AFFILIATIONS:

Society for Mining, Metallurgy, and Exploration, Inc., (SME)
Past Chairman of Pittsburgh Section
1997 Distinguished Member Award
2009 National Distinguished Member Award
Society of American Military Engineers
Engineering Society of Western Pennsylvania

PUBLICATIONS:

- 2005 Gray, T.A., and Horrell, S. (PaDEP). "Ninevah Acid Mine Pollution Abatement Project" presented at the 2005 World of Coal Ash, Lexington, KY, April 15, 2005.
- 2004 Gray, T.A., Crayne, L.M., Trevits, M.A., Glogowski, P.E. "Demonstration of Remote Mine Seal Construction" presented at the Annual SME Meeting, Denver, Colorado, February 23-25, 2004.
- 2007 Gray, T.A., "Surface Mining" article for inclusion in McGraw-Hill Encyclopedia of Science and Technology, 10th edition
- 2003 Gray, T.A., and Broush, J.C. "Use of GIS in Mining Applications" presented at the Seminar on the Use of GIS in Mining Application at California University, Canonsburg, PA, May 8, 2003.
- 2003 Gray, T.A., and Smith, Ed, USACE, "Ecosystem Restoration - South Branch Blacklick Creek" published in the March-April 2003 issue of The Military Engineer, SAME's monthly magazine.

- 2002 Gray, T.A., Gray, R.E. "Coal Combustion Products Can be Used to Construct Tailing Dams" presented at the 19th Annual International Pittsburgh Coal Conference, Pittsburgh, PA, September 25, 2002.
- 2002 Gray, T.A. and Gray, R.E. "Omega Mine Injection Projects" presented at the PA Conference on Abandoned Mine Reclamation, June 15, 2002, State College, PA.
- 2002 Gray, T.A., Gray, R.E., and Newman, F.B. "Utilization of Coal Combustion By-Products in Tailing Dams" presented at the Tailing Dams 2002 meeting in Las Vegas, NV, May 1, 2002.
- 2000 Gray, T. A., Kyper, T.N., Smith, E., and Hedin, R. "Feasibility Study for Ecosystem Restoration by Remediation of the Webster Mine Discharge at Nanty Glo, Pennsylvania." Presented at the U.S.D.O.E., NETL Facility, Morgantown, WV, October 4, 2000.
- 2000 Gray, T. A., Michalski, S.R., and Parkinson, J.W. "Re-Mining Coal Preparation Plant Slurry Ponds" presented at the Tailing Dams 2000, Association of State Dam Safety Officials Annual Conference, Las Vegas, NV, March 28-30, 2000.
- 1998 Gray, R. E., and Gray, T. A. "Coal Mine Reclamation by Ash Haulback." Presented at the 8th Congress of International Association of Engineering Geology, Vancouver, B.C., September 1998.
- 1998 Gray, T. A., Moran, T. C., Broschart, D., and Smith, G. "Injection of Coal Combustion By-Products into the Omega Mine for the Reduction of Acid Mine Drainage." Presented at the Pittsburgh Coal Conference in Pittsburgh, PA, September 15, 1998.
- 1998 Gray, T. A., Moran, T. C., Broschart, D., and Smith, G. "Injection of Coal Combustion By-Products into the Omega Mine for the Reduction of Acid Mine Drainage." Presented at the 1998 Annual National Meeting of the American Society for Surface Mining and Reclamation (ASSMR), Saint Louis, MO, May 16-21, 1998.
- 1998 Gray, R.E., and Gray, Thomas A. "Coal Combustion Ash Haulback." Presented at the 1998 Annual National Meeting of the American Society for Surface Mining and Reclamation (ASSMR), Saint Louis, MO, May 16-21, 1998.
- 1998 Moran, T. C., Gray, T. A., Smith, G. A., and Broschart, D.W. "Injection of Coal Combustion By-Products into the Omega Mine for the Reduction of Acid Mine Drainage." Presented at the West Virginia Surface Mine Drainage Task Force in Morgantown, WV, April 7-8, 1998.
- 1997 Gray, T. A., Moran, T. C., Broschart, D. W., and Smith, G. A. "The Omega Mine Grout Injection Project." Presented at the International Ash Utilization Symposium, Lexington, KY, October 20-22, 1997.
- 1997 Gray, T. A., Moran, T. C., Broschart, D. W., and Smith, G. A. "Using Coal Combustion By-Products to Reduce Acid Mine Drainage at the Omega Mine." Presented at the 19th Annual National Abandoned Mine Lands Conference at Canaan Valley, WV, August 18-19, 1997.
- 1997 Kyper, T. N., Snodgrass, J., and Gray, T. A. "Disposal of Coal Combustion By-Products in Underground Coal Mines." Published in the University of Kentucky Center for Applied Energy Research bimonthly newsletter, Energeia.

- 1997 Gray, T. A., Moran, T. C., Broschart, D., and Smith, G. "Plan for Injection of Coal Combustion Byproducts into the Omega Mine for the Reduction of Acid Mine Drainage." Presented at the 1997 Annual Meeting of the American Society for Surface Mining and Reclamation, Austin, TX, May 10-16, 1997.
- 1997 Ward, Patrick E., and Gray, T. A. "Environmental Standardization ISO 14000." Presented at the Central Appalachian Section of the Society for Mining, Metallurgy and Exploration, Inc.'s 1997 Annual Spring Meeting, Lexington, KY, April 4, 1997.
- 1997 Gray, T. A. "Coal Ash Utilization at Coal Mines." Presented at the West Virginia Mining and Reclamation Association Meeting, February 14, 1997.
- 1994 Gray, T. A., Perry, M. T., and Conrad, P. W. "Management of Coal Waste Disposal for Reduced Environmental Impacts and for Increased Profits." Presented at the annual meeting of the Society for Mining, Metallurgy, and Exploration, Albuquerque, NM, February 14-17, 1994.
- 1992 Gray, T. A., and Gray, R. E. "Mine Closure, Sealing, and Abandonment." In SME Mining Engineering Handbook, 2nd ed., edited by H. L. Hartman. Society for Mining, Metallurgy, & Exploration, 1992.
- 1991 Gray, T. A., Perry, M. T., and Gray, R. E. "Ash Haulback Alternatives for Coal Mine Operators." Presented at the American Mining Congress Coal Convention, Pittsburgh, PA, June 5, 1991.
- 1991 Gray, T. A., Bruhn, R. W., Luxbacher, G. W., and Ferrell, J. R. "The Structural Response of a Steel Lattice Transmission Tower to Mining-Related Ground Movements." Presented at the 10th International Conference on Ground Control in Mining, Morgantown, WV, June 10-12, 1991.
- 1990 Gray, T. A., and Perry, M. T. "Overview of AFBC Ash Disposal Options for Coal or Coal Waste Burning Power Plants." Presented at the Seventh Annual International Pittsburgh Coal Conference, Pittsburgh, PA, September 10-14, 1990.
- 1986 Gray, T. A. and Sethi, S. "Computer Modeling of Underground Ventilation at WIPP." Presented at the fall meeting of the Society of Mining Engineers of the AIME, St. Louis, MO, September 7, 1986.

ALLAN R. BERENBROK, P.E.
SENIOR PROJECT MANAGER
PITTSBURGH, PA

EDUCATION: B.S. Civil Engineering, Virginia Military Institute, 1980
M.S. Systems Management, University of Southern California, 1984

**CERTIFICATIONS/
REGISTRATIONS:** Professional Engineer, Pennsylvania, 037262-E, 1988

TRAINING: OSHA 1910.120 40-Hour HAZWOPER Training; May /1995
OSHA 1910.120 8-Hour Annual Refresher Training; October/1997

EXPERIENCE SUMMARY:

Mr. Allan R. Berenbrok has 28 total years of professional experience in civil design, project management and construction management as an officer in the United States Air Force, public works, and in private industry. Experience ranging from supervision of staff, management of budgets and schedules to commercial site development, private site development, municipal services, computerized storm water runoff and drainage analysis and design, erosion and sediment control permits, NPDES permits, water line design, construction management and design/build projects.

PROJECT EXPERIENCE:

Project Manager / Lead Design Engineer: West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation; Lewis and Preston Counties, West Virginia: 2009. Lead Design Engineer for the preparation of construction drawings to install wet mine seals and drainage improvements for the closure of abandoned mine portals on private property in Weston and Tunnelton West Virginia. Prepared construction specifications and construction cost estimate for the closure of nine mine portals.

Project Manager / Lead Design Engineer: Indiana County Conservation District; Indiana County, Pa. Bear Run Phase II, AMD Passive Treatment System; 2009 Lead Design Engineer for the design of a passive AMD mine treatment system, site grading and PaDEP / Indiana County Erosion and Sediment Control permit, stream restoration and preparation of a PaDEP Government Financed Construction Contract for a third party contractor to remove coal refuse from the site. Prepared construction grading plans, permits and hydraulic analysis of the Bear Run stream for a stream culvert crossing.

Lead Design Engineer: Gladden Mine Reclamation: South Fayette, Pa. 2009 Preparation of a site grading plan and passive AMD treatment system to treat a maximum flow rate of 1,500 gpm of AMD flow from the abandoned Gladden Mine into Millers Run and Chartiers Creek. Preparation of a grading plan, specifications and design calculations to create 3 acres of passive treatment ponds and design of a spray pumping system to deliver 1,000 gpm of AMD through a nozzle system for aeration and performance of an HEC – RAS study to determine the effect of the construction of the treatment ponds to the floodway of Millers Run.

Project Manager; Wal-Mart Stores; Wal-Mart ; Western Pennsylvania; 2003 to 2006.

Project Manager and client manager for the site development and site design for multiple Wal-Mart stores in western Pennsylvania. Prepared design drawings, coordinated onsite and offsite utilities, attended zoning hearing board meetings, local jurisdictional council meetings, prepared land development applications and permits through local jurisdictional entities, coordinated with architects on site design, direct client manager with Wal-Mart design manager, prepared erosion and sediment control permits through local counties and NPDES permits through the PaDEP.

Project Manager; Residential Site Development; Maronda Homes, First City ; Western Pennsylvania; 2003 to 2006.

Project Manager and client manager for the site development and site design for multiple residential subdivision developments in western Pennsylvania. Prepared design drawings, coordinated onsite and offsite utilities, attended zoning hearing board meetings, local jurisdictional council meetings, prepared land development applications and permits through local jurisdictional entities, direct client manager with developer, prepared erosion and sediment control permits through local counties and NPDES permits through the PaDEP.

Project Manager; Conceptual and Preliminary Site Development; Piedmont Triad Airport; Greensboro, North Carolina; 1998 to 2003.

Project Manager for conceptual and preliminary design services to create a program to develop 600 acres of airport property into a cargo hub facility. Developed preliminary airfield design and layout of a proposed runway, taxiways, apron and relocation of an existing state roadway. Developed a detailed program design and construction schedule for the five-year project duration. Utilized Microsoft Project to develop detailed construction durations including earthwork haul scenarios to move approximately 3 million cubic yards of material. Developed detailed mass haul diagrams and multiple fill scenarios to evaluate third party facility construction start dates and analyze construction schedule conflicts.

Project Manager; Stormwater Management, Baltimore, Maryland. CSX Corporation. 2007

Responsible for the hydraulic and hydrologic analysis and design of storm water management basins for three locations within the City of Baltimore and adjacent to Curtis Bay. Responsible for plans, specifications, bidding documents, local and state permitting requirements and construction inspection to grade and install three storm water basins.

Project Engineer; Stream Hydrologic and Hydraulic Analysis, Charleston, West Virginia. Private Developer. 1989

Responsible for hydraulic analysis of box culverts meeting the state of West Virginia Flood Plain Criteria for private land development. Project included the analysis of the stream using the HEC 1 and HEC 2 computer model to determine upstream and downstream water surface elevations, and HY-8 in order to size the box culverts. Duties included client contact and with the USA Corps of Engineers, Huntington District.



MICHAEL D. O'CONNELL, P.E.
Manager of Civil Engineering

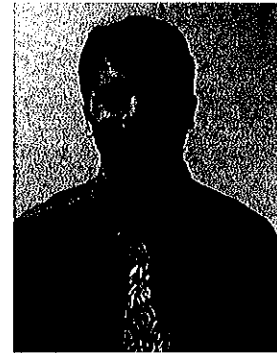
Mr. O'Connell, a civil engineer, with a background in the construction and surveying fields, joined Tetra Tech Architects & Engineers in 2002 as the Manager of our Civil Engineering Group. Mike brings more than 11 years of experience in educational, municipal, residential, retail, commercial, and sports site development projects. Areas of expertise include water and sewage systems, roadways, stormwater and floodplain management, site layout, and land development.

Mr. O'Connell has significant experience in all phases of development projects such as state and local agency permitting and review requirements, environmental applications, cost estimates, construction specifications, technical reports, feasibility studies, in-field inspection/certification, construction administration and problem solving. Additionally, Mr. O'Connell has represented a varying range of clients including Corning Incorporated, the City of Elmira, Lowe's Home Improvement Centers, as well as numerous public schools and private developers.

K-12 EDUCATION EXPERIENCE

New Calkins Road Middle School, Pittsford Central School District, Pittsford, NY, 2003-2006 - Civil Engineer for \$36 million, 203,000sf high-performance middle school integrates numerous LEED® and CHPS-based approaches including geothermal heating and cooling, extensive day-lighting, heat recovery, reflective roofing, efficient lighting, a thermally enhanced envelope, and a stormwater management system qualifying for LEED® best practices. The facility has qualified for several state energy grants including the maximum \$400,000 from NYSERDA. Responsibilities included supervision of a team of Landscape Architects/Civil Engineers. Work included detailed construction documents and technical specifications of for the development of a large vacant parcel into the new Middle School property. In addition to the typical items such as grading, layout, parking and vehicular access, the extensive site design required upgrades to public highway and water systems all while taking into account the property's protected on-site wetlands. A series of wet ponds provided aesthetics while handling both stormwater management and outdoor educational spaces. Helped to obtain the large number of required regulatory permits and Agency approvals in time for construction. Provided technical assistance/administration throughout the construction phase.

Multi-Building Alterations & BIM, Greene Central School District, Greene, NY, 2006-2008 - Civil Engineer - Supervision/Quality Control of the Site Design team. Construction documents and technical specifications for planning/development of multi-site upgrades including grading, layout, parking, vehicular access and utility infrastructure.



Project Role:

Manager of Civil Engineering

Education:

B.S., Civil and Environmental Engineering, Clarkson University, 1992

Registrations/Certifications:

Professional Engineer, New York, 1999, No. 076300

Professional Affiliations:

American Society of Civil Engineers

Office:

Ithaca, New York

Years of Experience:

16

Years with Tetra Tech:

Six

Challenges were the expansion/upgrade of the track and field facility and mitigating a significant regional drainage problem occurring on the high school property. The mitigation included upsizing of a stormwater conveyance tunnel and the addition of an underground stormwater storage system. Assisted with obtaining the required regulatory permits and Agency approvals. Provided technical assistance throughout the project phases. Scope: \$36 million Renovations and additions project at the middle school, high school, two elementary schools, and the bus garage. Classroom and Gym addition, new geothermal system at High School, extensive window replacement, bus lift replacement, fire alarm replacement, roof replacement, and athletic fields.

New Otisville Elementary School, Minisink Valley Central School District, Slate Hill, NY, 2006-2008 – Civil Engineer. Supervised of a team of Landscape Architects/Civil Engineers. Work included detailed construction documents and technical specifications of for the development of a large vacant parcel into the new Elementary School property. In addition to the typical items such as grading, layout, parking and vehicular access, the extensive site design required upgrades to public highway and water systems, and a large on-site septic system, all while taking into account the property's existing high groundwater and on-site wetlands. A series of wet ponds provided aesthetics while handling both stormwater management and outdoor educational spaces. Assisted in obtaining a large number of required regulatory permits and Agency approvals in time for construction. Provided technical assistance/administration throughout the construction phase. Scope: \$39 million new 900-student, 128,000sf, K-5 elementary school that incorporates numerous sustainable, green, and LEED® design elements. This two-story facility's main features include a clock tower entrance with interior cathedral ceilings and exposed trusses, three-station gym, and library with exterior window wall and outdoor reading garden.

Institute of Technology @ Syracuse Central, Syracuse City School District, Syracuse, NY, 2007 - Civil Engineer - Supervision of the Site Design team and Quality Control/Quality Assurance Reviews of the construction documents and technical specifications. Site work included site prep, demolition, and utility infrastructure, and subsurface stormwater management for vehicular access and parking lot upgrades for the densely urban site. Required working closely with the City of Syracuse regarding easements, roadway access, drainage discharge and utility coordination. Provided technical assistance for both the design and permit application portions of the project. Scope: Design documents for the conservation and reuse of a building on the National Register of Historic Places. Program includes renovations to accommodate a regional Career and Technical Education Program for 900 students, including an addition/connection to an adjacent existing Technical High School.

Nottingham High School Renovations and New Athletic Fields, Syracuse City School District, Syracuse, NY, 2006-2007 - Civil Engineer - Design and/or oversight of all aspects of site development. Tasks included detailed construction documents and technical specifications of the turf system, site grading, layout of athletic fields, vehicular access and parking, utility infrastructure, and stormwater management. Helped to see that the necessary regulatory permits and Agency approvals were obtained. Also provided technical assistance/administration throughout the construction phase. Scope: \$6.2 million project included components from a new sound booth and seating in the auditorium to renovations consisting of an eight-lane running track, an artificial turf field, bleacher seating, press box, athletic lighting, concession stand/ team rooms/ toilet rooms, and parking. Additional site improvements include new natural turf baseball and football fields and tennis courts.

Master Plan & District-wide Additions & Alterations, Brentwood UFSD, Brentwood, NY, Ongoing - Civil Engineer - Supervised Site Design team and Quality Control/Quality Assurance Reviews of the construction documents and technical specifications. Site work included site prep, demolition, and utility

and transportation infrastructure to accommodate the large classroom addition. Part of the project required the complete replacement of a large, on-site wastewater disposal system. System was designed to meet the particular requirements of the County Health Department. Provided staffing assignments, workload scheduling, and technical assistance throughout the project. Scope: \$26 million expansion of the HS. 204,000sf of new space includes a gymnasium; 1,000 seat auditorium; separate cafeterias grades 9 to 12; large-group instruction room; new classrooms; art, music, science and technology labs; solar panels on all District facilities; District-wide security & technology upgrades which included wireless & smart boards; home careers with a pre-k program, extensive site work including vehicular and pedestrian circulation, parking, and athletic fields.

Multi-Building Additions & Alterations, Niskayuna Central School District, Niskayuna, NY, 2006-Present - Civil Engineer - Supervision of a team of site designers on a large multi-site, multi-phase project. Construction documents and technical specifications of reprogramming the vehicular and pedestrian access to the site, coordinating additional highway access and drainage discharge with the DOT, site grading, athletic fields and irrigation, infrastructure upgrades (domestic water, fire protection, sanitary sewer), remediation of existing site drainage problems, and management of stormwater quality and quantity. Helped to obtain the necessary regulatory permits and agency approvals. Scope: \$94.5 million multi-building addition and alterations project.

Multi-Building Renovations and Additions, Penfield Central School District, Penfield, NY, 2008-Present - Civil Engineer - Supervised a team of site designers on a large multi-site, multi-phase project. Tasks included detailed construction documents and technical specifications of reprogramming and expanding vehicular and pedestrian access, design of a multi-field athletic complex with both natural and artificial turf, site grading, irrigation, infrastructure upgrades (domestic water, fire protection, sanitary sewer), remediation of existing site drainage problems, and management of stormwater quality and quantity. Assisted in seeing that necessary regulatory permits and Agency approvals were obtained. Scope: \$65 million additions and renovations project including the addition of new classrooms, science rooms, a high school auditorium, school kitchens, HVAC renovations and athletic renovations including replacement of bleachers.

MUNICIPAL EXPERIENCE

Main Street, Water Steet, Clemens Square Rehabilitation, City of Elmira, Elmira, NY – Site/Civil Designer - street construction for one block of Main Street and two blocks of Water Street; abandonment and/or renovations of areaway vaults under the existing sidewalks; new streetscape and pedestrian amenities throughout the area. (With Sear-Brown Group)

Intermodal Transportation Center, Chemung County, Elmira, NY, 1998 – Civil Engineer – Evaluation, planning, and Site/Civil design of a new Intermodal Transportation Center in Elmira, N.Y. Worked with Architects and Landscape Architects to demolish an existing urban site and develop a new City/County/regional bus terminal in downtown Elmira, NY. (With Sear-Brown group)

Floodplain Studies, City of Elmira, Elmira, NY, 1997 – Project Engineer – The City wanted flood control improvements which resulted in a need for analysis of the interior drainage floodplain. As Lead Project Engineer, Mr. O'Connell prepared maps and documents to submit to the Federal Emergency Management Agency (FEMA) for review. The result of the analysis was to remove a significant portion of the City from the 100-year flood zone.



MICHAEL D. O'CONNELL, P.E.
Manager of Civil Engineering

Water Treatment Upgrades, Village of Castile, Castile, NY – Civil Designer – Project included a new chlorination building, a hydrant and valve replacement program, and 1,300-l.f. water main replacement.

Water Distribution System, Village of Odessa, Odessa, NY, 2000 – Civil Engineer - complete design of a new water distribution system including wells, chlorination, storage tank and distribution piping.

Harold W. Chambers
Survey Department Manager

EDUCATION

B.S. Mining Engineering

West Virginia University
Morgantown, WV 1981

REGISTRATIONS AND LICENSES

WV Association of Land Surveyors
OSHA HAZWOPER Annual Certification
MSHA Annual Certification

DIRECT WORK EXPERIENCE AND PRIMARY RESPONSIBILITIES

Triad Engineering, Inc.
Morgantown, WV

Surveying Services Manager
1984-Present

Mountain State Surveying
Kingwood, WV

Permit Specialist/Surveyor
1981-1984

CURRENT POSITION RESPONSIBILITIES

Mr. Chambers has 25 years of diversified surveying experience. His expertise includes development of permits, topographic mapping, highway design surveys, surface and underground mine surveys and project administration. Mr. Chambers has performed engineering/design services for numerous environmental and reclamation projects. He has been active in numerous projects involving the mining industry, state and federal agencies. Mr. Chambers has responsibility for the management of Morgantown's in-house surveying department. Mr. Chambers duties involve client contacts, proposal preparation, contract negotiation, project coordination, document / data management, staff supervision, site reconnaissance, field surveys and data reduction.

PROJECT EXPERIENCE SUMMARY

International Coal Group (ICG), Inc., Morgantown, WV

As Project Manager/Engineer/Surveyor for surface and underground coal mine projects since 1986, Mr. Chambers has provided varying levels of services to the planning, permitting and operational stages of projects. Services provided include, surveying, site reconnaissance, site development design, drainage design and field engineering, and permitting services. Mr. Chambers worked in the design and development of the Sycamore, Lake Floyd, Spruce 2 and Spruce 3 deep mine facilities, as well as, the planning for expansion of the coarse coal refuse piles at Hawthorne and Philippi Development.

Morgantown Energy Associates / Dominion Resources, Morgantown, WV

As Project Manager and Party Chief, Mr. Chambers provided coordination of resources for emergency surveying services required to monitor movement of a coal silo which had experienced an internal bin failure resulting in a fatality. Monitoring was provided during the rescue, recovery and demolition phases of this incident. As Party Chief, provided shift supervision and data reduction, evaluation and reporting.

Consolidation Coal Company, McElroy Mine, Moundsville, WV

As Party Chief, Mr. Chambers provided field crew supervision and data reduction for the planned expansion of the load out harbor facility. River soundings were performed utilizing Real Time Kinematic GPS surveying methods. Borehole locations for the river cell were staked on shore with references provided to the correct river locations.

Dominion Resources, Delmont, PA

As Project Manager and Party Chief, Mr. Chambers provided project administration, coordination of resources and data reduction/report preparation for the subsidence monitoring of pipeline TL-342 in Greene County, PA, during underground coal mine longwall subsidence events since 1992. Strain gages were installed along this pipeline with regular measurements of same performed to ascertain any change

in strain along this pipeline. Survey data was also obtained to determine the maximum amount and cessation of subsidence.

DMJM Harris, Inc., Pittsburgh, PA

As Project Manager, for this WV Department of Transportation, Division of Highways project in Monongalia County, WV, the Mon Fayette Expressway, Mr. Chambers provided project administration and coordination of resources to complete assigned work tasks for the design of an interstate interchange, new exit, mainline roadway and local access roads. Project mapping was edited and formatted to current WVDOH CADD standards.

Mt. Storm Wind Force, Bayard, WV

As Project Manager/Engineer/Surveyor, Mr. Chambers provided property line reconnaissance and supervision of survey field crews for the development of an ALTA land survey and topographic mapping for a project area spread over several thousand acres. Additionally, Mr. Chambers provided drainage design for the plans included in the storm water management permit required by WVDEP.

Parsons Brickerhoff, Fairmont, WV

As Project Manager, for this WV Department of Transportation, Division of Highways Corridor H project in Tucker County, WV, Mr. Chambers provided project administration and coordination of resources to complete assigned work tasks for the design of an interchange, mainline roadway and local access roads. Project mapping was edited and formatted to current WVDOH CADD standards.

William M. Gardner
Senior Geologist / Drilling Manager

EDUCATION

B.S. Geology West Virginia Univ., Morgantown, WV 1976

REGISTRATION AND LICENSES

Licensed Well Driller WV (No. 00061)
OHSA 40 Hour Hazwoper Training
OHSA 8 Hour Hazwoper Site Supervisor Training

DIRECT WORK EXPERIENCE AND PRIMARY RESPONSIBILITIES

Triad Engineering Inc. Drilling Manager/Senior Engineering Geologist
Morgantown, WV 1982 to Present

Triad Engineering, Inc. Staff Geologist
Morgantown, WV 1977 to 1983

Halliburton Services Field Engineer
Zanesville, Ohio January 1977 to October 1977

CURRENT POSITION RESPONSIBILITIES

Mr. Gardner has over 29 years of experience as a geologist with Triad Engineering, Inc. (TRIAD) and has managed the Morgantown, WV Drilling operations since 1982. During this time he has been involved with almost all drilling-related projects performed by TRIAD at this office. While employed at TRIAD, the firm has grown from having no in-house drilling capabilities to presently operating 12 drilling rigs. He is experienced with all phases of drilling and sampling operations required for the completion of mineral reserve projects, as well as those for geotechnical, environmental, and construction-related projects. He has been involved with numerous projects which required specialized drilling techniques such as river borings, sampling in slurry impoundments, various instrument installations, tie back anchor installations, drilling projects conducted within structures, and underground horizontal degasification drilling projects. In addition, Mr. Gardner has been responsible for design and installation of many groundwater monitoring wells, and for training of drill crews for proper monitoring well installation procedures. These monitoring wells have ranged from shallow depths to depths over 350 feet. Some of the projects requiring monitoring well installation have included sites considered for dams, landfills, areas affected by both past and future mining activities, service station sites, and other sites having environmental concerns. Many of the sites requiring groundwater monitoring wells have been on projects closely monitored by the West Virginia Division of Environmental Protection, Office of Waste Management.

PROJECT EXPERIENCE SUMMARY

Consolidation Coal Company Mineral Reserve Evaluations for Dents Run Mine Site, Robinson Run Mine Site, and Blacksville # 1 Mine Site, Morgantown, WV

Responsible for supervision of seven (7) drill rigs for core drilling and sampling activities required for mineral reserve evaluation. Logged all rock core, developed geologic sections, and evaluated roof conditions for future mining operations.

US Bureau of Mines Degasification Projects at Federal # 2 Mine, Grant Town, WV, Marianna Mine Site at Marianna, PA, and Keyser Steel Mine, Sunnyside, Utah

Developed horizontal degasification techniques and equipment for horizontal drilling in coal seams in underground mines. Responsible for providing drilling supervision, methane sampling and monitoring, instrument readings for drill string orientation, and development of permanent venting of methane gas from mining operations. Also submitted final reports to the US Bureau of Mines.

West Virginia University Hospital, Morgantown, WV

Performed a subsurface investigation inside the existing hospital to evaluate distress problems being experienced by the hospital structure. This project required drilling inside the hospital while the hospital was conducting normal business operations. Provided project and drilling supervision, logging of all core, evaluation of data, and prepared a geotechnical report of findings.

Drilling Services for Vindex Energy Mine Site, Mt. Storm, WV

Installed numerous monitoring wells required for obtaining mining related permits. These monitoring wells ranged from depths of 50 feet to over 300 feet deep. Also performed core borings to evaluate quality, thickness, and mining depths of coal seam.

Consol Energy McElroy Preparation Plant and Harbor Upgrade, Cresap, WV

Developed drilling operations which consisted of core borings on land and in the Ohio River for evaluation of site. River borings required drilling off of a barge to depths of approximately 60 feet.

Consolidation Coal Hughes Hollow Impoundment Stage II Construction, Greene County, PA

Installed monitoring wells and piezometers as required by MSHA permit specifications. Some of these piezometers consisted of Multilevel Cassagrande Piezometer Installations to 100 foot depths.

WBOY Tower Foundation and Anchor Evaluation, Clarksburg, WV

Project involved drilling along side existing tower foundations and through existing anchor foundations to determine size of foundations and the allowable bearing capacity of foundation bearing materials for future additions to the tower. Logged all samples, provided analysis and developed a geotechnical report which provided recommendations to allow construction of the new tower facilities.

Backbone Mountain Wind Turbine Project, Thomas, West Virginia

Performed geotechnical drilling services for approximately 44 wind turbine sites to be constructed over 6 miles on Backbone Mountain. In addition to the drilling, resistivity testing was conducted at each Wind Turbine Site for grounding design. Supervised all data collection, performed resistivity calculations and submitted final report of resistivity results.

Davis to Bismark Section 6 Corridor H, Davis, West Virginia

Provided drilling services required for design of Corridor H Section 6. This project consisted of drilling numerous core borings in sensitive environmental conditions (wetlands).

MYP Diamond Site, Uniontown, PA

Provided core drilling services in an underground limestone mine for evaluation of mine floor conditions for permit requirements.

Consolidation Coal Company Robena Mine Slurry Impoundment, Alicia, PA

Installed numerous piezometers as required by MSHA. Several of these piezometers were pneumatic piezometers requiring special drilling and/or installation techniques.

Cadiz Street Project 2 Stabilization Project, Cadiz, Ohio

Performed core borings as required by the Ohio Department of Natural Resources to evaluate previous grouting activities conducted to remediate mine subsidence effected areas from underground coal mining activities.

CSXT M.6 Post 2.2 to 2.4, AMEC Associates, Monaca, PA

Provided drilling services for evaluation of landslides along existing railroad tracks. This project involved very difficult access due to both the limited railway access to the site, and from the damage the landslides had caused along side the tracks. Performed drilling and sampling operations in coordination with CSX normal operations.

Gall Lab Facilities, West Virginia University Engineering Building, Morgantown, WV

Responsible for developing drilling and sampling operations inside the WVU Engineering Building to evaluate existing foundations for possible support of new lab facilities. Supervised all drilling activities, logged samples, performed analysis, and provided a geotechnical report outlining subsurface conditions encountered, and provided recommendations for foundation support of the proposed facilities.

Port Perry Bridge/Tunnel Modifications Milepost JP-2.51

Responsible for drilling horizontal core borings inside an existing railroad tunnel for geotechnical evaluation necessary for future enlargement of the tunnel. The drilling equipment had to be modified such that it could be supported by high-rail equipment. Modifications also had to be made to shorten the drill derrick and to the drill controls to allow horizontal drill operation. Support scaffolding had to be constructed at each boring location to guide the drill string. This route was a very heavily traveled route drilling work was conducted in coordination with the Norfolk Southern Railroad train schedules.

PROJECT	DESIGN			PRIMARY STAFF PARTICIPATION/ CAPACITY *** M=Management P=Professional	
	Slope Stability Analysis	Geotechnical Investigation	Abandoned Surface Mine Reclamation	Thomas A Gray, P.E.	Allan R. Berenbrok, P.E.
Guyan Country Club Reservoir Pond, Hunting				P	
Gladden Mine Treatment Ponds, South Fayette Township, PA				M/P	P
Omega Mine AMD Reduction by Mine Grouting Co, WV		X		M/P	
Piedmont Triad Airport Storm Water Management					P
Wal Mart Store Site Development, various locations					P
Dam Breach Analysis, Pittsburgh, PA					P
Fishing Run Abandoned Mine Reclamation, South Fayette Township, PA		X	X	M/P	
AMD Abatement Project - Nivevah Mine and Co PA				M/P	
Godby Branch Water Supply Extension Project		X	X	M/P	
Mine Pump Station, Canterbury Mine, PA				M/P	
Municipal Water System and Sanitary System					P
Maronda Homes Residential Development, Virginia					P
Findlay Township Restrooms and Baseball Field					P
Fox Chapel Water Supply, Fox Chapel, PA					P
Playgrounds / Recreation areas, Various Locations					P
Storm Water Management Ponds, Baltimore, MD					P
Storage of Sewer Overflow in an Abandoned Mine County, PA					P
Storm Water Management Ponds, Baltimore, MD					P

* List whether project experience is current

** Use this area to provide specific services

*** List Primary Design personnel and