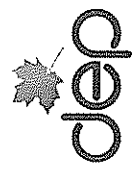


West Virginia Department of Environmental Protection

EXPRESSION OF INTEREST

NELLIS (SMITH) DRAINAGE DESIGN

SUBMITTED TO:



State of West Virginia  
Department of Environmental Protection  
Office of AML&R  
601 57th Street SE  
Charleston, WV 25304

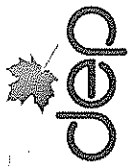
SUBMITTED BY:



Gannett Fleming, Inc.  
34 Commerce Drive, Suite 203  
Morgantown, WV 26501

RECEIVED  
2010 APR 27 AM 9:58  
WV PURCHASING  
DIVISION

April 2010



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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  
**DEP15002**

PAGE  
**1**

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

RFQ COPY  
 TYPE NAME/ADDRESS HERE

VENDOR

SHIP TO

**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	F.O.B.	FREIGHT TERMS
03/17/2010				

BID OPENING DATE: **04/28/2010**                      BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-29		
<p><b>NELLIS (SMITH) DRAINAGE DESIGN</b></p> <p><b>EXPRESSION OF INTEREST</b></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 NELLIS (SMITH) DRAINAGE PROJECT IN BOONE COUNTY, WEST VIRGINIA, PER THE FOLLOWING BID REQUIREMENTS AND ATTACHED SPECIFICATIONS.</p> <p><b>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THIS CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</b></p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

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



**GANNETT FLEMING, INC.**  
Suite 203  
34 Commerce Drive  
Morgantown, WV 26501  
**Office: (304) 296-6492**  
Fax: (304) 296-6495  
www.gannettfleming.com

April 26, 2010

Purchasing Division  
2019 Washington Street, East  
P.O. Box 50130  
Charleston, WV 25305-0130  
Attn: Chuck Bowman

RE: Expression of Interest  
West Virginia Department of Environmental Protection  
DEP 15002 - Nellis (Smith) Drainage Design

Dear Mr. Bowman:

Gannett Fleming, Inc. is pleased to submit for your consideration this proposal and "Expression of Interest" for the West Virginia Department of Environmental Protection (WVDEP), Office of Abandoned Mine Lands and Reclamation (AML) to provide engineering services for the Nellis (Smith) Drainage Design Project.

We welcome the opportunity to present our credentials to you and look forward to the chance to discuss our approach and our capabilities with the selection committee.

Please contact me at 304-296-6492 if you have any questions or if I can provide any clarifications regarding our proposal.

Sincerely,  
GANNETT FLEMING, INC.

Samer H. Petro, P.E.  
Manager - WV Operations

Enclosures

*A Tradition of Excellence*





## *Section 1 – Corporate History and AML Experience*

**Corporate History** - The history of the Gannett Fleming organization parallels the history of consulting engineering in the United States during the twentieth century. The firm was founded on August 1, 1915 as "Farley Gannett, Consulting Engineer," at a time when sweeping changes were taking place in the country's industrial development and economic patterns. Widespread and rapid urban growth, the need for mass transportation, and the evolution of the automobile were a few of the factors that created new demands and opportunities for engineering services. Gannett Fleming has been a major contributor to an outstanding and productive era in American engineering history.

The Gannett Fleming organization has evolved over the years from a three-man office at its inception to its current structure, a multi-disciplined group of companies having more than 1,900 employees with offices in principal cities in the United States. We have performed engineering services on thousands of diverse assignments in all 50 states, the District of Columbia, the U.S. Virgin Islands, Puerto Rico, and 51 other countries.

While the Gannett Fleming organization grew, the nation's highway system developed from a few miles of narrow twisting roads to a vast network of expressways, turnpikes, and primary highways. Gannett Fleming was among those chosen to design major portions of the Pennsylvania Turnpike, a highway that became the model for many toll roads that followed.

Methods of sewage disposal slowly progressed from drainage canals and polluted streams to highly efficient sewerage systems and sewage treatment plants. Gannett Fleming has become extensively involved in pollution abatement through the design of wastewater treatment, solid waste disposal, and air pollution control facilities.

Our firm has contributed to the development of the collection, treatment, and distribution of potable water from early concepts to today's state-of-the-art methods. One of the firm's early assignments was the design of a 60-foot-high earthen dam for the Blue Mountain Water Company in Lehigh County, PA. Since then, we have completed more than 1,000 water





## West Virginia Department of Environmental Protection

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supply projects, and thereby assisted communities in finding new sources of water, maintaining the quality of present sources, treating water for safe human consumption, and providing the means to transmit water from sources to consumers. Our state-of-the-art capability in water treatment and computer modeling of water distribution systems has provided clients with very efficient and economical facilities.

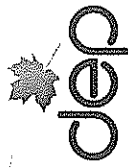
Flood control is another area in which Gannett Fleming is prominent. We have been involved in the design of flood control works such as local protection projects and flood control dams and reservoirs since our founding. We have contributed to the concept of multi-purpose reservoirs, which combine flood control, recreation, and water supply in single projects. Beginning with the design of local flood control works on Mill Creek to protect Erie, PA, our firm designed such diverse projects as a pumped storage dam for the P.H. Glatfelter Paper Company Reservoir Project in York County, PA, which created the 1,260-acre recreational Lake Marburg; the Tioga-Hammond Lakes Project for the U.S. Army Corps of Engineers that consists of a 140-foot-high rolled earth and rockfill dam on the Tioga River; a 122-foot-high rolled earth and rockfill dam with a 240-foot-deep connecting channel between the reservoirs on Crooked Creek; and a 135-foot high roller compacted concrete water supply dam for the City of Lebanon Authority.

In the 1960s, when mass transportation was feeling the impact of the private automobile, Gannett Fleming designed the Lindenwold Line in New Jersey, a high-speed mass transit facility that transports thousands of people daily between Philadelphia and residential communities in New Jersey. In more recent years, Gannett Fleming has participated in the design of most of the new transit systems that have been constructed in the United States. We have become a leader in the design of transit maintenance facilities and automated guide way transit.

To address environmental concerns, governmental regulation, and increasingly complex projects, Gannett Fleming has evolved into a true multi-disciplined organization. We have increased our capabilities in planning, hazardous waste management, architectural, geotechnical, mechanical/ electrical, information technology services, financial, project management, quality control areas, and public relations. Affiliated Gannett Fleming companies provide geotechnical investigation, acoustical analysis design and system installation, Design/Build services, and design and manufacturing of equipment for the heavy construction industry.



**Gannett Fleming**

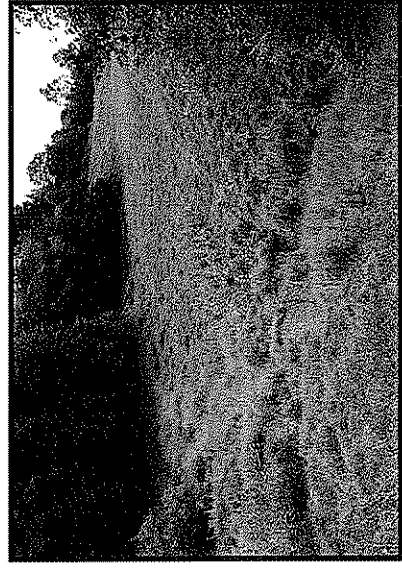


## West Virginia Department of Environmental Protection

Conditioned by many years of experience and with capabilities in most state-of-the-art engineering activities, the Gannett Fleming organization is in a position to successfully meet present-day challenges and make constructive contributions to our society in the future.

**AML Experience** - Gannett Fleming knows the mining and reclamation industry and works with clients to rapidly identify the unique aspects of each project early in the planning process. Our firm's reputation and excellent working relationship with both federal and state regulatory and reclamation agencies has enabled us to develop environmentally sensitive, cost effective AML reclamation and AMD abatement and treatment strategies for our reclamation clients. We also work with various private individuals/organizations and government agencies to investigate abandoned mine sites relative to watershed assessments, reclamation of abandoned mine lands (AML), the abatement of acid mine drainage (AMD) by passive or active treatment technologies, and the assessment and rehabilitation of existing treatment systems.

Our firm's abandoned mine land reclamation and acid mine drainage abatement services are supported by L.G. Hefager Drilling, Inc. (a wholly owned subsidiary of Gannett Fleming); associations with other drilling companies, surface geophysical equipment, a modern geotechnical laboratory and GeoDecisions, Inc. (a division of Gannett Fleming specializing in GIS and remote sensing technology for natural resources, environmental and engineering applications). Our Mining and Reclamation Group coupled with a nationwide network of offices provides the skills and resources necessary to supply professional planning, design and engineering services to a variety of private and public clients.



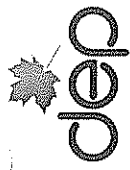
AML Reclamation Site, Dents Run, PA



AMD Passive Treatment System, Babb Creek



**Gannett Fleming**



West Virginia Department of Environmental Protection

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*Section 2 - WVDEP - AML Consultant Confidential Qualification Questionnaire  
(Attachment "B")*



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

PROJECT NAME Nellis (Smith) Drainage Design	DATE (DAY, MONTH, YEAR) 03/11/2010	FEIN 25-1613591
1. FIRM NAME Gannett Fleming, Inc.	2. HOME OFFICE BUSINESS ADDRESS PO Box 67100 Harrisburg, PA 17106-7100	3. FORMER FIRM NAME N/A
4. HOME OFFICE TELEPHONE (717) 763-7212	5. ESTABLISHED (YEAR) 1915	6. TYPE OWNERSHIP Corporation
7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE Gannett Fleming, Inc., Suite 200 11 Commerce Drive, Morgantown, WV 26501 (304) 296-6492, Samer H. Petro, PE, Reg. Office Mgr.		
8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM 8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS  <b>Please see attached sheets for additional response.</b>		

9. PERSONNEL BY DISCIPLINE (Morgantown Office in Parenthesis)

198 ADMINISTRATIVE	6 ECOLOGISTS	5 LANDSCAPE ARCHITECTS	135 STRUCTURAL ENGINEERS (2)
32 ARCHITECTS	3 ECONOMISTS	24 MECHANICAL ENGINEERS	11 SURVEYORS (1)
7 BIOLOGIST	76 ELECTRICAL ENGINEERS	1 MINING ENGINEERS	196 TRAFFIC ENGINEERS
112 CADD OPERATORS (1)	100 ENVIRONMENTALISTS	0 PHOTOGRAMMETRISTS	764 OTHER
4 CHEMICAL ENGINEERS	4 ESTIMATORS	71 PLANNERS: URBAN/REGIONAL	
62 CIVIL ENGINEERS (2)	50 GEOLOGISTS	40 SANITARY ENGINEERS	
108 CONSTRUCTION INSPECTORS	0 HISTORIANS	70 SOILS ENGINEERS	
0 DESIGNERS	3 HYDROLOGISTS	3 SPECIFICATION WRITERS	2085 TOTAL PERSONNEL
0 DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 2  
 \*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?      U YES      LJ NO

## 8. Names of Principal Officers or Members of Firm

- \* William M. Stout, Chairman of the Board and Chief Executive Officer
- \* Robert M. Scaer, Vice Chairman, President and Chief Operating Officer
- \* Chester L. Allen, Senior Vice President and Secretary
- \* John G. Diviney, Senior Vice President
- \* John R. Kenny, Senior Vice President

## 8a. Name, Title, & Telephone Number - Other Principals

Edward M. Abrams, Vice President, 215-988-9590  
Martha J. Averso, Vice President, 717-763-7211  
Warren A. Barrett II, Vice President, 410-585-1460  
Charles H. Beauduy, Vice President, 717-763-7211  
Keith D. Bennett, Vice President, 727-541-3444  
William B. Bingham, Vice President, 717-763-7211  
R. Edwin Blair, Jr., Vice President, 757-873-0768  
Joseph A. Buchheit, Vice President, 717-763-7211  
Edward C. Burk, Jr., Vice President, 734-753-5880  
Jay H. Calhoun, Vice President, 813-831-8870  
George R. Campanella, Vice President, 856-802-9930  
Carlos M. Cejas, Vice President, 786-845-9540  
Keith M. Chase, Vice President, 717-763-7211  
Walter Cherwonoy, Vice President, 215-557-0106  
John W. Cook, Jr., Vice President, 717-763-7211  
Rodney J. Dawson, Vice President, 213-624-0347  
John A. Derr, Vice President, 602-553-8817  
John V. Dougherty, Vice President, 904-998-9809  
Trent L. Dreese, Vice President, 717-763-7211  
Dean B. Durkee, Vice President, 602-553-8817  
James M. Dzedziak, Vice President, 908-755-0040  
James C. Elliott, Vice President, 717-763-7211  
Stephen B. Gerlach, Vice President, 410-585-1460  
Susan F. Gibbons, Vice President, 215-557-0106  
Dale R. Glatfelter, Vice President, 717-763-7211  
Peter A. Golonka, Vice President, 617-527-7822  
Naldo Gonzalez, Vice President, 786-845-9540  
William T. Guy, Vice President, 717-763-7211  
Stephen Hadjiyane, Vice President, 516-671-8066  
Glen L. Hair, Vice President, 717-763-7211  
David E. Hassrick, Vice President, 609-584-9592  
Thomas C. Hawk, Vice President, 904-998-9809  
Steven I. Hawtof, Vice President, 410-585-1460  
Jesse G. Hite, Jr., Vice President, 704-375-2438  
Arthur G. Hoffmann, Jr., Vice President, 412-922-5575  
Raymond L. Hofsass, Vice President, 610-650-8101  
Rodney E. Holderbaum, Vice President and Assistant Secretary, 717-763-7211  
Judy L. Hricak, Vice President, 717-763-7211  
Frederick H. Inyard, Vice President, 516-671-8066  
Ronald, A. Jager, Vice President, 814-234-8625  
Mark D. Johnson, Vice President, 978-687-7292  
Aaron D. Keno, Vice President, 703-222-3704  
John W. Kovacs, Vice President, 412-922-5575  
Dennis F. Kugle, Vice President, 608-836-1500  
James A. Langer, Vice President, 904-998-9809  
James R. Laurita, Vice President, 212-967-9833  
Michael T. Lee, Vice President and

Lynn E. Knepp Senior Vice President and Treasurer  
\* Gene C. Koontz, Senior Vice President  
\* Paul D. Nowicki, Senior Vice President  
Robert E. Ragan, Senior Vice President

\* Director

Assistant Secretary, 717-763-7211  
Richard K. Lee, Vice President, 610-917-9100  
Thomas G. Leech, Vice President, 412-922-5575  
Ronald N. Leins, Vice President, 813-882-4366  
Paul J. Lewis, Vice President, 717-763-7211  
George S. Link, Vice President, 856-802-9930  
Michael Wm. Malloy, Vice President, 505-265-8468  
Samuel Mayman, Vice President, 213-624-0347  
Esther M. McGinnis, Vice President, 610-650-8101  
Barbara R. Mclemore, Vice President, Security Officer and Corporate Ethics Officer, 717-763-7211  
Gregory Milakovic, Vice President, 856-802-9930  
Lawrence E. Miller, Vice President, 602-553-8817  
Michael T. Moore, Vice President, 561-655-8232  
Michael A. Morgan, Vice President, 908-755-9849  
Donald G. Morosky, Vice President, 717-763-7211  
Bryan P. Mulqueen, Vice President, 919-859-4880  
Donald B. Nicholas, Vice President and Assistant Secretary, 781-380-7750  
Charles R. Norrish, III Vice President, 212-967-9833  
Paul L. O'Neal, Vice President, 717-763-7211  
Fotios Papamichael, Vice President, 516-671-8066  
Marlay B. Price, Vice President, 614-794-9424  
Richard A. Pugh, Vice President and Assistant Secretary, 717-763-7211  
John D. Purdy, Vice President, 212-967-9833  
Thomas M. Rachford, Vice President, 717-763-7211  
Jeffrey L. Raffensperger, Vice President, 717-763-7211  
Jeffrey J. Ream, Vice President, 814-765-4320  
Russell L. Ricker, III Vice President, 717-763-7211  
Joseph Rikk, Jr., Vice President, 614-794-9424  
Steven G. Rowley, Vice President, 717-537-4115  
Gary A. Rozmus, Vice President, 516-671-8066  
Atul M. Salhotra, Vice President, 713-784-5151  
James M. Savidge, Vice President, 727-541-3444  
Rodrick A. Savidge, Vice President, 717-763-7211  
Matthew J. Schiemer, Vice President, 215-756-1155  
Ronald D. Schreier, Vice President, 602-553-8817  
Ralph H. Schwartz, Vice President, 717-763-7211  
Kambiz F. Shadan, Vice President, 415-384-0822  
Scott W. Sibley, Vice President, 610-650-8101  
Dennis W. Silbaugh, Vice President, 717-763-7211  
John R. Snodgrass, Vice President, 602-553-8817  
Myung-Hak Sung, Vice President, 813-882-4366  
Karl F. Updegraff, Vice President, 717-756-2158  
D. Eric Veydt, Vice President, 412-922-5575  
Patrick J. Welch, Vice President, 717-763-7211  
Ronald C. Williams, Vice President, 727-541-3444  
David B. Wilson, Vice President, 717-763-7211

Terry L. Winebrenner, Vice President, 614-794-9424  
Edward L. Woyden, Vice President, 610-650-8101  
Chen-yu Yen, Vice President, 410-585-1460  
Laurence S. Zimmermann, Vice President, 717-763-7211  
Robert K. Rumbaugh, Jr., Assistant Controller, 717-763-7211  
Ruby L. Ile, Assistant Secretary, 717-763-7211

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

<p>NAME AND ADDRESS:  N/A</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>
<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>
<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. Are your firm's personnel experienced in Abandoned Mine Lands Remediation/Mine Reclamation Engineering?

YES Description and Number of Projects: \_\_\_\_\_

**Yes.** Gannett Fleming has performed Abandoned Mine Land Reclamation on over 10 abandoned mine sites over the past several years. These design projects included preparation of overburden analyses, alkaline addition plans, project plans and specifications, hydrologic & hydraulic analyses, and environmental permits, such as E&S, NPDES, and wetland permitting/mitigation.

NO

B. Are your firm's personnel experienced in Soil Analysis?

YES Description and Number of Projects: \_\_\_\_\_

**Yes.** Gannett Fleming personnel have performed numerous soil analyses in support of civil works and environmental projects. Our geotechnical environmental engineers work closely with our drillers and soils lab to direct sampling and testing. These projects involved test pits, topographic methods, and active and passive methods for leachate and gas control. We have also performed engineering soil analyses for use in geotechnical engineering calculations, and we have a full service soils laboratory in our Camp Hill office that serves both geotechnical and environmental markets.

NO

C. Are your firm's personnel experienced in hydrology and hydraulics?

YES Description and Number of Projects: \_\_\_\_\_

**Yes.** Gannett Fleming has performed hydrologic and hydraulic analyses on a multitude of projects including Land development, surface mine permits, surface mine reclamation projects, transportation. Gannett Fleming has also completed the required NPDES permitting associated with the above mentioned projects.

NO

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

YES Description and Number of Projects: \_\_\_\_\_

NO

**No.** These services are routinely provided by Gannett Fleming through subconsultants.

E. Are your firm's personnel 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: \_\_\_\_\_

**Yes.** Gannett Fleming has designed over 100 domestic water lines, as well as water treatment plants and pumping/storage facilities throughout the United States for nearly 100 years. We have performed groundwater studies to determine if there was connections

NO

F. Are your firm's personnel experienced in Acid Mine Drainage Evaluation and Abatement Design?

YES Description and Number of Projects: \_\_\_\_\_

**Yes.** Gannett Fleming has prepared watershed studies to determine the extent and location of acid mine drainage sources followed by recommendations and cost estimates for abatement. We have designed both active and passive treatment systems for acid mine drainage and acid rain abatement in Pennsylvania, Ohio, and West Virginia.

NO

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

NAME & TITLE (Last, First, Middle Int.)		YEARS OF EXPERIENCE	
Jeffrey J. Ream, PE		YEARS OF AML DESIGN EXPERIENCE: 8	YEARS OF AML RELATED DESIGN EXPERIENCE: 15
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 8	

Brief Explanation of Responsibilities:

Serves as senior civil engineer for land development and environmental projects involving: hydraulic/hydrologic analysis and design of stormwater management systems; preparation of erosion and sedimentation control plans; design of sanitary sewer and potable water systems and other infrastructure features; geotechnical design of foundations, retaining structures, earth embankments and impoundments; surface water monitoring; wetland mitigation planning and design; stream and riparian ecosystem restoration; application of active and passive wetland water treatment systems; water quality investigations and related remedial investigations, plans and designs.

EDUCATION (Degree, Year, Specialization)

B.S., Civil Engineering, 1993

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineer

REGISTRATION (Type, Year, State)

Registered Professional Engineer (Pennsylvania 1999)  
#053753-E

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	
F. Roy Zug, III, PE		YEARS OF AML DESIGN EXPERIENCE: 35	YEARS OF AML RELATED DESIGN EXPERIENCE: 35
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 20	

Brief Explanation of Responsibilities:

Responsible for and directly involved in the coordination and preparation of state and federal permit applications for surface and underground coal mining, non-coal mining, mine reclamation, industrial facility siting, land development and subdivision plans, water resource development projects, and waste disposal plans. Also responsible for and directly involved in the coordination and preparation of private and government-related civil engineering projects, including municipal services plans and specifications, industrial facility siting, land development and subdivision plans, water resource development projects, and waste disposal plans. Project responsibilities will include the design and review of waste water collection lines and pumping facilities associated with development plans and treatment system expansion and upgrades.

EDUCATION (Degree, Year, Specialization)

B.S., Civil Engineering, 1971

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

N/A

REGISTRATION (Type, Year, State)

Registered Professional Engineer (Pennsylvania 1971)  
#017274-E  
State of Ohio Professional Engineer #65834

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 AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
<b>Kevin W. Bloom, PE</b>	28	28	20

Brief Explanation of Responsibilities

Responsible for coordination and preparation of state and federal permits for surface and underground coal mining, non-coal mining, mine reclamation, coal preparation facilities, and industrial facility siting. Mr. Bloom is also directly involved with the preparation and coordination of land development plans, valuation studies, wetland evaluations, highway occupancy permits, air quality permits and earth disturbance permits. Project responsibilities have also included conducting hydrologic assessments relative to erosion and sediment (E&S) pollution control design, mining operation plans, soils evaluations, and reclamation and revegetation plans. Mr. Bloom is skilled in conducting and supervision of drilling programs, construction of monitoring wells, surface and groundwater monitoring, and installation of flow-monitoring devices, pumping tests, and groundwater modeling.

EDUCATION (Degree, Year, Specialization)

B.S., Mining Engineering, 1981

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Society for Mining, Metallurgy and Exploration

REGISTRATION (Type, Year, State)

Registered Professional Engineer (Pennsylvania 1986)  
#035160-E

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 AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
<b>Samer H. Petro, PE</b>	1	1	1

Brief Explanation of Responsibilities

Senior Structural Engineer responsible for designing and analyzing highway bridges and other transportation-related structures.

EDUCATION (Degree, Year, Specialization)

B.S.C.E., Structural Engineering, 1987  
M.S.C.E., Structural Engineering, 1993

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineers  
Association for Bridge Construction and Design  
Steering Committee Member, National Conference on Integral Abutment and Jointless Bridges, 2005. Conference sponsored by FHWA and WVDOT.

REGISTRATION (Type, Year, State)

P.E.: Ohio - No. 66132 (2001)  
West Virginia - No. 15710 (2003)

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:
<b>Michael A. Neely, PE</b>	2	3

Brief Explanation of Responsibilities  
 Project Manager for the West Virginia Regional Office responsible for the design of highway and airport projects, including right-of-way, site development, stormwater, utilities, signing and pavement marking, erosion and sediment pollution control, final cross sections, quantities, and report preparation. Also assists in client consultation, budget preparation, and project scheduling.

EDUCATION (Degree, Year, Specialization)  
 B.S., Civil Engineering, 1996

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS  
 National Society of Professional Engineers

REGISTRATION (Type, Year, State)  
 West Virginia - No. 015304 (2002)  
 Florida - No. 61143 (2004)

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:
<b>Gene A. Janero, PE</b>	13	N/A

Brief Explanation of Responsibilities  
 Geotechnical Project Engineer responsible for design on various geotechnical and environmental projects, including layout and implementation of field exploration programs, site reconnaissance, drilling inspection, soil and water sampling, and design activities. Also develops and prepares geotechnical reports, technical specifications, and cost estimates.

EDUCATION (Degree, Year, Specialization)  
 B.S., Civil Engineering, 1995

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS  
 Society of American Military Engineers  
 Secretary, Pittsburgh Post  
 American Society of Civil Engineers  
 Deep Foundations Institute

REGISTRATION (Type, Year, State)  
 P.E.: Pennsylvania - No. PE060736 (2004)



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:
<b>Michael A. Knight, PG</b>	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	N/A
	20	20	

Brief Explanation of Responsibilities

Senior Project Manager and Geologist responsible for directing geologic and hydrogeologic projects involving the study, evaluation, and assessment of earth materials. Areas of responsible charge include geologic interpretation; geologic structures evaluation, groundwater and soils contamination problems; solid waste disposal; public water supply development; abandoned mine land reclamation; aquifer testing; remedial design; wellhead protection; and earth resources development.

EDUCATION (Degree, Year, Specialization)

B.S., Geology, 1983

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

N/A

REGISTRATION (Type, Year, State)  
 P.G.: Wyoming - No. PG-893 (1992)  
 Kentucky - No. 1594 (1994)  
 Pennsylvania - No. 001237-G (1995)  
 MSHA Mine Safety Certified Surface, Coal, Metal, and Nonmetal (2005)

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:
<b>Michael D. Antonetti, PG, IRS</b>	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	N/A
	5	5	

Brief Explanation of Responsibilities

Environmental Project Manager responsible for supporting and developing environmental site remediation services for a wide variety of projects, including energy production, collection, storage, and transmission facilities and Brownfield sites.

EDUCATION (Degree, Year, Specialization)

B.S., Environmental Geology, Juniata College, 1980  
 M.S., Geology, Syracuse University, 1982

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Pennsylvania Council of Professional Geologists

REGISTRATION (Type, Year, State)

P.G.: Pennsylvania - No. PG002575G (1995)  
 I.R.S.: West Virginia - No. 218 (2003)

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

NAME & TITLE (Last, First, Middle Int.)

YEARS OF EXPERIENCE

YEARS OF AML DESIGN EXPERIENCE:

YEARS OF AML RELATED DESIGN EXPERIENCE:

YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:

Brief Explanation of Responsibilities

EDUCATION (Degree, Year, Specialization)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

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

Please see attached response(s).

## EQUIPMENT

Gannett Fleming, Inc. (Gannett Fleming), maintains state-of-the-art computer equipment to support many specific disciplines including: CADD; GIS; Global Positioning System (GPS) and Precision Surveying; Engineering Design and Numerical Analyses; Desktop Publishing; and Multimedia and Graphic Services. Computer resources within each office are linked together with a Windows Local Area Network and corporate wide by a Wide Area Network. Our network of computer resources consists of more than 1,200 desktop PCs and 100 notebooks, Internet e-mail, direct PC Faxing, a full T-3 line that can transmit data at a speed of 44.7 MB per second, World Wide Web (WWW) Internet access, and our own FTP site.

## COMPUTER SERVICES

Much of the equipment we maintain is devoted toward providing computer services of all kinds. Central to this system is our IBM ES/9000 System featuring 64 megabytes of internal memory, which operates the VM/ESA and VSE/ESA Operating Systems and supports remote communications from microcomputers and terminals across the continental U.S. This equipment is complemented by auxiliary equipment and software for other specific tasks. In addition to these, we currently maintain and use PCs and 66 laser printers companywide.

### **Detailed Listing of Computer Hardware**

	<b>Quantity</b>
IBM ES/9000 model 9221-170 with 64 MB of real storage .....	1
IBM 3390 22.7 GB disk drives for a total of 68.1 GB of online storage .....	1
STK 4480 cartridge tape drives .....	6
STK 4600 9-track tape drives .....	2
XEROX 4090 92 PPM laser printer .....	1
Oce 2140 136 PPM laser printer .....	5
STK 5000 impact printers .....	2

**Sharing and Delivering Digital Files** - Gannett Fleming shares and delivers digital files with other users and clients using a variety of methods. We have our own FTP site, Internet e-mail, a network database server, and standard and specialized hardware for writing digital data to disks, CD-ROMs, Zip Drives, and a variety of tape formats. Brief descriptions of each method follow:

- **FTP:** Gannett Fleming has its own FTP site on the WWW at ftp.gfnet.com. Using the FTP utility, a user can post files directly to our public FTP site. This facilitates downloading large digital files for our clients and between our offices.
- **Internet e-mail:** Gannett Fleming engineers and other employees who regularly work with computers are provided with their own Internet e-mail address. Our e-mail software enables users to send and receive text messages and attached files.
- **Writing Data to Disks, CDs, Zip Drives, and Various Tape Formats:** Gannett Fleming can read, store, and archive digital data in almost any format and medium available. Besides standard floppy disks and high-density diskettes, we have a good mix of WORM and Rewritable Drives for permanently writing large data files to writeable CDs. We also provide and support a wide range of tape storage formats ranging from small 4-mm and 8-mm tape cartridges to large 9-track tape drives for substantial mainframe databases.

## CADD SYSTEM

Gannett Fleming uses the latest technologies in CADD systems to increase the efficiency of our designers and engineers. We have more than 23 years of direct CADD experience using purchased design software, as well as design software developed in house. Our CADD system provides our engineers with the ability to design directly within the CADD environment. Currently, Gannett Fleming has 264 Bentley MicroStation stations and approximately 217 AutoCAD stations company-wide. Versions of CADD software that Gannett Fleming supports include MicroStation Version 8 and AutoCAD 2005. CADD workstations and engineering PCs are attached to a Windows network to provide a "state-of-the-art" distributed processing environment.

## **Experience**

Gannett Fleming has significant CADD experience in the design of bridges, tunnels, heavy rail subway systems, highways, buildings, water treatment plants, bus facilities, mapping, and site development. With more than 23 years of experience, Gannett Fleming has learned to effectively manage and control a CADD-oriented design approach on our projects.

Gannett Fleming has emerged as a leader of GIS as well as CADD. Our firm has significant experience integrating CADD and GIS capabilities on our engineering projects. Our GIS services include siting, mapping, information management, and facilities management. Our GIS software includes ArcCAD, ArcInfo, Intergraph MGE, and Atlas; as well as many others.

## **CADD Proficiency and Training**

Gannett Fleming's "CADD Central" group is responsible for ensuring that our CADD and computer operations are being effectively used and coordinated for projects throughout the company. CADD Central is composed of professional engineers, programmers, graphic specialists, and experienced technicians. Their function is to make certain that Gannett Fleming's CADD, engineering, and graphic applications remain on the leading edge of technology. Our own in-house training programs instruct operators to effectively implement our CADD/GIS systems in an engineering environment. The training incorporates the latest procedures, software, and programming necessary for maximizing the productivity of our operations. More than 23 years of CADD experience provides us with the knowledge necessary to develop sound, functional training programs. Our training programs cover MicroStation, AutoCAD, and various design software, including InRoads and GEOPAK.

In addition to experience using purchased software, our programming staff has developed in-house CADD software. Programs have been written to link engineering design software with the generation of design drawings, streamline MicroStation user commands, and create AutoCAD LISP routines and MDL applications.

Final CADD output can be plotted on a wide selection of plotters and laser printers. Our plotting capabilities include Océ electrostatic color plotters, large-format Hewlett-Packard InkJet plotters, and a high-end Atlas color plotter. High-speed laser printers available for printing CADD output include various black-and-white, and color laserjet printers. All of our plotters and printers, regardless of their location, are accessible to all Gannett Fleming CADD operators.

The CADD Central group also provides a supplemental training program to keep our more than 300 trained operators current on the latest software and procedures. This additional training ensures that our CADD operators are using the CADD system to its maximum potential.

## INFORMATION TECHNOLOGY/WEB SERVICES

Gannett Fleming's Information Technology division is comprised of GeoDecisions®, Information Technology (IT) Services, and GANCOM®. Our staff of more than 250 dedicated IT professionals leverage state-of-the-art technology to support our internal operations as well to provide award-winning solutions to our federal, state, local government, and private-sector clients. Gannett Fleming's IT group is ISO 9001:2000 certified.

GeoDecisions, a national leader in geospatial IT, and the IT Services group combine to provide a one-stop-shop for any client's IT needs. GANCOM is one of the few businesses to offer true "concept to completion" design, production, and fulfillment of copy, print, and direct mail products and services. The combination of human talent, advanced technology, and our state-of-the-art facilities gives us the unique ability to handle entire projects at a single location.

Gannett Fleming has completed numerous award-winning, Internet-based solutions for public and private clients across the country, including more than 400 IT and GIS-related projects, and more than 50 GIS systems installed nationwide. The main Web services that Gannett Fleming provides for its clients include: GIS-driven data or mapping Web sites; Web-based applications; public relations/project Web sites; secure project collaboration Web sites (i.e., extranets); Web site enhancement services; Web site maintenance; and Web site hosting. We are experienced in developing and hosting any type of Web system that our clients require.

All types of Web sites can be hosted on one of Gannett Fleming's in-house Web servers. We are currently hosting 25 different Web sites that we have completed and/or maintain for our clients. Recent high-end information management projects include enterprise-wide infrastructure management and system integration projects, Web portals, and Internet and intranet Web server solutions. Our commitment to research and development makes certain that we provide cutting-edge solutions that are tailored to our clients' needs.

Our general approach is to develop Web sites that are easy to use, as well as easy to upgrade and maintain. Gannett Fleming's database and programming staff are extremely proficient in Oracle, Microsoft SQL, Microsoft Access, ASP, ASP.NET, JAVA, JavaScript, XML, and VBScript programming, to name just a few. We have the knowledge and experience to provide any type of database Internet solution that is required to complete an assignment. Gannett Fleming's extensive staff of Web developers, designers, multimedia specialists, programmers, and database developers is at our clients' disposal.

## PROJECT WEB SITES

Because many of our clients are publicly-funded entities, the Internet provides a fast and easy way to keep the public updated and involved throughout the life of a project. Project Web Sites can provide project updates, schedule information, team information, site photos, and even live construction feeds and video. This is also a valuable way to gather feedback from the public in the form of online surveys, message boards, and other interactive methods of communication. We utilize our designers and programming knowledge to provide sites that are informative, interesting, and interactive. Project Web sites can be broken into two different categories, public information and project collaboration sites. Gannett Fleming has extensive experience in developing and hosting both types of project Web sites.

The first category, public information transfer sites, are Web sites available to the general public that contain information about a particular project that would be of interest to those who are affected by the project in some way. An example of this type of Web site would be a bridge construction project. The Web site would contain general information such as the extent of the project, project schedule, photos at different stages of construction, detours and associated alternate routes, as well as links to other related Web sites that may be of interest to the public.

The second category is a project collaboration site. This type of site is not available to the general public. Access is restricted to those individuals who are working on the project. These Web sites provide features such as task assignment, archiving and exchange of CADD or document files, tracked requests for information, message boards, e-mail notification for updates, and custom applications as needed. Collaborative sites can also be used very effectively in conjunction with public or GIS Web sites to provide a secure area for team and agency communications. Collaborative sites can provide different levels of security for different users or team members. On large projects with multiple contractors, access to documents and areas of the Web site can be restricted to only those areas that the contractor has a need to see. The Project Collaboration system is available 24 hours a day, 365 days a year, anywhere that you can access the Internet.

#### GPS AND PRECISION SURVEYING

Gannett Fleming currently owns Leica System 500 RTK GPS Surveying System. This equipment is capable of performing sub-centimeter precision positioning surveys. We use our Trimble GPS (Pathfinder Professional) equipment as a survey tool to navigate, determine base points, x-y locations, and log feature attribute information with submeter accuracy. This system is used to map natural and man-made features; establish the initial traverse for corridor planning activities; and for locating feature points (manholes), monitoring points (air samples), and pollutant sources. We can plot GPS data on maps using AutoCAD, MicroStation, or GIS ArcInfo. Feature attribute data such as wetland data can be logged in the field and printed on a customized data form. Digital data from an external source such as a noise meter can be imported into GPS and presented on a map or form in conjunction with a feature. To complement GPS, Gannett Fleming also has surveying crews with total station capabilities with first order accuracy. A list of key GPS and conventional survey equipment follows:

	<b>Quantity</b>
Trimble Pathfinder ProXL units (with submeter accuracy)	2
Theodolites and Total Stations	.28
Transits	1
Electronic Distance Measuring (EDM)	.25
Levels	.4
Automatic Levels	.27
Boats with Motors	2
Bucket Truck	1
Fathometer	.2
Trimble GeoXT	1

#### DATA CONVERSION

Gannett Fleming has extensive experience in data conversion and output. We have developed efficient procedures for converting hardcopy pre-existing maps and drawings to digital format. Through the use of several large-format 800-dpi scanners, raster editing software, and interactive vectorization software products, we are capable of providing a total package of services.

The hardware that we are currently using for our scanning operations consists of a Vidar truScan 800, and an Ideal FSS8300; both are state-of-the-art 800-dpi E-size scanners. The scanners convert line and text features from the original hardcopy into a raster image, the resolution of which is determined by the quality of the hardcopy and scanner settings.

Once the raster image is created in one of many acceptable formats, (Intergraph .CIT, AutoCAD .RLE, .TIF, .BMP, etc.) we process the raster image with one of our raster editing tools. We use I/RAS C and I/RAS B software products to process either black-and-white or greyscale scanned raster images. Both products have the capability for an affine transformation so that raster images can be georeferenced to any desired datum and projection.

For vectorization purposes, our primary tool is I/GEOVEC software by Intergraph. I/GEOVEC is an interactive vectorization software product that generates vector graphics for CADD or GIS. User-identified parameters define the line work to be vectorized. While the operator must still provide direction cues, this procedure has proven cost-effective over hand-digitizing or current automatic vectorization solutions. Feature fields can also be linked with attributes so that data input can be layered and linked with databases later in the mapping procedure.

#### PLOTTING

Gannett Fleming has a significant selection of plotters from which to choose. Our plotting capabilities consist of a Versatec 8636 electrostatic plotter, a Versatec 8944 color electrostatic plotter, and several large-format Hewlett-Packard InkJet plotters. All of our plotters, regardless of their location, are accessible to any Gannett Fleming operator through the network. This capability provides our regional offices with high-volume plotting capabilities.

#### **Detailed Description of CADD, GIS, and Programming Systems Hardware Quantity**

Pentium-based CADD Workstations .....	293
Sun Sparc 20 Workstations .....	1
Versatec 8944 Color Electrostatic Plotter .....	1
Versatec 8636 HRE Electrostatic 400 DPI .....	1
Hewlett-Packard 1055 CM DesignJet Color Plotters .....	2
Hewlett-Packard 755 CM DesignJet Color Plotters .....	5
Hewlett-Packard 650C DesignJet Color Plotters .....	5
Hewlett-Packard InkJet Plotters .....	10
Hewlett-Packard 4M+ PCL/PostScript LaserJet .....	1
QMS 860 Laser Plotters, 11x17 Size .....	8
Hewlett-Packard 4M Laser Plotters, 11x17 Size .....	4
Hewlett-Packard LaserJet III and LaserJet 4 Printers .....	40
CD Writers .....	5
Vidar truScan Large-Format (E size) Scanner .....	1
Ideal Large-Format (E size) Scanner .....	1
Data Digitizers .....	5

(current specifications include 700MHz Pentium III, 256 MB RAM, 18 GB hard drive, and dual monitors; one 19 inch and one 17 inch)

#### **Novell IAN**

Main Network server Dual 300MHz Pentium II with 250 GB on line Hard Drive Space and 1 GB RAM  
 23 Additional Application servers including 6 Internet servers.

#### **Software**

Bentley MicroStation V8	Bentley MicroStation/J
Auto CAD 2005 I	Autodesk 3D Studio
Bentley InRoads	Bentley FieldWorks
GEOPAK	Intergraph InFlow
Intergraph Project Architect	Terra Model
GWN DTM	GWN COGO
Descartes	I/GEOVEC
Intergraph MGE	Crystal Reports
Microsoft Visual Basic	Microsoft Visual FoxPro
Microsoft Access	Protogent Client Server
Development Suite	Borland C/C++
Informix-SQL	Intergraph Interplot
MicroSIF SIF Translator	AXIOM Filefixer
AXIOM Spellchecker	I/RAS/C
I/RAS/B	PCIPLOT

MicroStation Masterpiece  
 Arc/Info  
 Atlas GIS  
 DM/DBA ADM Toolkit  
 ArcCAD  
 ARC NETWORK  
 GeoMedia  
 MGE Grid Analyst  
 MGE Network  
 MGE Section Manager  
 ARC/INFO Grid  
 ArcView 3.0a  
 ArcView Spatial Analyst  
 MrSID  
 Oracle  
 Oracle Spatial DBASE  
 Oracle Spatial Paradox  
 GeoMedia Web MapObjects  
 ArcIMS

QuickView PRO  
 Intergraph MGE  
 Byers Plot Station  
 Exceed  
 ARC TIIN  
 ARC COGO  
 MapInfo  
 MGE Grid Generation  
 MGE Projection Manager  
 MGE Terrain Analyst  
 ERDAS  
 ArcView Network Analyst  
 Vista Map  
 MapObjects  
 Oracle Spatial Sybase  
 Oracle Spatial Access  
 GeoMedia  
 ArcSDE  
 Maptitude.

#### IN-HOUSE PROGRAMS AND SOFTWARE DEVELOPMENT

Gannett Fleming is committed to continuously increasing the efficiency with which our CADD drawings are generated. Our programming staff has extensive experience developing programs and procedures for our CADD/GIS system. These programs make possible the automated generation of design drawings from our engineering applications. Gannett Fleming developed programs include MDL applications, MicroStation User Commands, AutoCAD LISP routines, Fortran, and C programs. These programs supplement the various proprietary engineering design software that we have purchased.

Our in-house-developed programs reduce the possibility of error and the labor required to complete design drawings. An added benefit is that our engineers can immediately evaluate their designs and quickly implement changes. Our staff has recently completed the following programs:

- A computer application to automate the process of generating PENNDOT required Item Tabulation Sheets. The application was developed using Microsoft's Visual FoxPro. The program allows users to input standard and non-standard tab items into a database, which in turn creates required cost reports and items as ASCII files. The ASCII output files are then imported into MicroStation using IABz MDL program.
- A highway sign computer program developed for the Arizona Department of Transportation. This traffic engineering MDL program adds highway sign character, sign panels, and arrows, all with proper spacing and witness line dimension labels. The user needs only to provide the character string to be placed into the sign panel, and select any number of predefined character heights.
- A Bridge Analysis computer program developed for MicroStation CADD for Gannett Fleming's Transportation Division. The program analyzes PENNDOT design criteria for multi-span steel girder and multi-span prestressed girder highway bridges and calculates values of shear and moment at each tenth point. The program uses the results of calculations generated from the application and graphs the shear and moment at the tenth points, at user-definable scale, and generates and fills in a PENNDOT-required table suitable for submission with project drawings.



- A relational database with a text-based Graphical Users Interface that assists dam operators and engineers in estimating the cost of upgrading nonfederal earth embankment dams. The program features an input template for data entry, interactive filter-building dialogue boxes, database record display either editing capabilities, and printing utilities.
- A program that generates sewer profiles along roadway alignments from engineering design data files.
- A user-friendly relational database for estimating costs associated with dam rehabilitation.
- A "C" program that can reduce cross section data from electronic survey or engineering design software and create finished, formatted drawings, complete with existing ground links and associated text in a CADD design file.
- An interactive CADD program that calculates and labels the stations and offsets of any point with reference to an identified baseline. The text is oriented to the final drawing and is in the required format. This is ideal for right-of-way work and property plats.
- A program that reduces survey data produced from a total station. This data is then processed with InRoads software to produce finished graphics for contract drawings.
- Two in-house programs that can be applied to produce soil profile drawings. The first of these interactive programs generates a boring log complete with title, layer depths, blow counts, and graphics using very simplified operator input for maximum speed and efficiency. The second program transfers the soil descriptions into the design file from another word processing device. The boring data can be loaded into a three-dimensional or two-dimensional design file. In three-dimensional design files, cross sections that contain complete boring log information can be taken anywhere on the project.
- Graphical database for recording structural inspection findings. This software is used in the field by the inspector to graphically record the defects of structural components on a drawing while physically looking at the same component. The same graphical interface is then used in the office to review and analyze findings. This software has been applied to both buildings and bridges.

#### MANAGEMENT COMPUTER PROGRAMS

- Primavera SureTrak - Project management software for complex design/production projects with integration/construction management. Compatible to Primavera Project Planner.
- Primavera Project Planner - Project management software to schedule either I-J or precedence-type networks. Provides control of costs and resources.
- Welcom OpenPlan - Desktop and professional versions with full integration of PENNDOT Template.
- Microsoft Project - Microsoft's version of project management software.

## GEOTECHNICAL LABORATORY

Gannett Fleming operates a fully equipped 2,000-square-foot soils laboratory. Its facilities and personnel are capable of performing a full range of soil tests as required to analyze and design cut slopes, embankments, landfills, earth barriers, impervious linings, earth covers, and structural foundations.

Equipment is available to perform soil classification, Atterberg limits, unconfined compression, direct shear, triaxial shear, compactions, California Bearing Ratio, permeability, pH, ion exchange capacity, conductivity, and other soil tests. Engineers and geotechnicians experienced in soil engineering and soil testing staff the facility. Tests are performed under the direction of senior professionals who specialize in geotechnical engineering.

The company also has the capacity and equipment to perform field tests of soil density, compaction, permeability, percolation, settlement, slope movement, groundwater elevation, pore pressures, groundwater quality, and other quantitative and qualitative factors. Through the use of our own in house drilling crews or in association with drilling companies, complete subsurface exploration projects can be performed under the firm's professional direction.

The soils testing laboratory is accredited by the AASHTO. The AASHTO Accreditation Program, established in June 1988, is the only program that certifies laboratories for the full complement of basic soil tests.

Personnel have completed 40-hour health and safety training in accordance with OSHA Regulation 29 CFR 1910.120 and are enrolled in a medical monitoring program allowing the laboratory to handle and test potentially contaminated materials.

### **Tests Performed**

Permeability	Unconfined compression
Direct shear	Triaxial shear
Residual shear	Compaction
California bearing ratio	Consolidation
Soil classifications	Sieve analysis
Hydrometer	Atterberg limits
Specific gravity	Organic content
Resistivity of soils	Slake durability
Point load testing of rock	pH, ion exchange capacity

### **Equipment**

	<b>Quantity</b>
Flexible wall permeability cells.....	3
Constant head perm cells.....	1
Triaxial cells.....	2
Consolidometers.....	3
Direct shear machine.....	1
Sieve shakers.....	2
Electronic balances.....	5
Ovens.....	6
Slake durability apparatus.....	1
Muffle furnace.....	1
Point load apparatus.....	1

### Geotechnical Field Equipment

Vertical and horizontal inclinometers	Digital data loggers
Nuclear density gauges	Piezometers
Sand cones	Pocket penetrometers
Resistivity meters	Double ring infiltrometers
Settlement plates	Turbidimeters
Water level indicators	Soil gas probes
Seismograph	

### GEOTECHNICAL SOFTWARE

Our library of geotechnical software includes programs for pile driving, analyzing inclinometer data, performing finite element analyses of embankment construction, seepage analysis, slope stability, aquifer analysis, sheet pile wall design, foundation analysis, earthquake analysis, settlement, retaining structures, and evaluating sliding stability of concrete structures. The following programs are used regularly by our geotechnical engineers:

CANDE89	CRSP	3DSAD	CSLIDE
MIRASLOPE	PCSTABL6	PASTABLE	PASTABLM
ROCKPACKIII	REAME3D	SLOPE/W	SNAIL
WESHAKE	SHAKE	COM624G	GRLWEAP
PILEDG	PILE	CBEAR	FEECON
SIGMA	ABUT4	CCELL	CTWALL
CTSHORING	CWALSHT	SPW911	SEEP
ROCKGROUT	LOGDRAFTIII	STEREO	DIGIPRO
GEOSYSTEM	DARWIN	LPILE	PLAXIS

### DRILLING EQUIPMENT

Gannett Fleming, through its affiliate L.G. Hetager Drilling, Inc., offers complete drilling capabilities. Hetager Drilling has been providing drilling services since 1952 in support of engineering design and construction projects. Our capabilities include diamond core, air rotary, hammer, reverse air circulation, and auger drilling. We perform pressure testing and pressure grouting; instrumentation; monitoring well installation; land and water drilling; and split spoon, undisturbed and rock core sampling.

Our drilling operations are based in Punxsutawney, Pennsylvania with a regional office in Columbus, Ohio. We employ an experienced staff of nearly 40 drilling personnel and machinists. We operate 19 rigs with a wide range of capabilities and a fully staffed machine shop. By manufacturing our own equipment, parts, and supplies, we are able to adapt standard equipment for special applications.

### Equipment

Equipment	Quantity
Track mount drill rigs.....	7
Truck mount drill rigs.....	6
Skid mount drill rigs.....	3
ATV drill rigs.....	3
Dozers.....	1
Lowboys.....	2
Steam jennys.....	6
ATV waterbuggies.....	2
4WD water tracks.....	6
150 to 750 CFM air compressors.....	2
Generators.....	2
Welders.....	5
Supply pumps.....	9
Trash pumps.....	16

Grout plants.....3  
 Barge.....1  
 Geo probe.....1

**ENVIRONMENTAL LABORATORY**

Gannett Fleming is associated with an environmental laboratory that is located in our facility and is capable of performing a vast range of water quality, solid waste and environmental testing. The laboratory is nationally accredited under the guidelines of the NELAC program. Analytical equipment includes an autoanalyzer, flame and flameless atomic absorption spectrophotometers, an X-ray diffraction spectrophotometer, a mass spectrograph, gas chromatographs, an infrared analyzer, and the normal array of laboratory facilities. A comprehensive list of our environmental equipment is listed below.

The Environmental Laboratory contains sophisticated, state of the art instrumentation and data processing equipment capable of performing most organic and inorganic analyses.

**Organics Equipment**

	<b>Quantity</b>
INCO's 50 mass spectrograph with auto sampler#1, ID# MLCH-1	1
LCS 2000 tekmar	1
ALS 2016 tekmar	1
Varian 3400 gas chromatograph	1
Tracor gas chromatograph with dual ECD detectors	1
Tracor gas chromatograph with FID/ECD detectors	1
INCO's 50 mass spectrograph with auto sampler#1, ID# MLCH-4	1
LCS 2000 tekmar	1
ALS 2016 tekmar	1
Varian 3400 gas chromatograph	1
Dynatech auto-injectors for gas chromatographs	1
Tekmar sonic disruptor probe	1
Internal floor centrifuge	1
International bench top centrifuge	1
Labline multi-temp block digester	1
Baker 6 place disc extraction manifold	1
VWR vortex genie	1
Varian CP - 3800 GC (in-service 9/04)	1
Varian 3300 - GC (in-service 9/04)	1
Varian archon purge and trap auto sampler (in-service 9/04)	1
Varian saturn 3 GC/MS (in-service 9/04)	1
Varian star 3400CX (in-service 9/04)	1
Tekmar 3000 model 14-30V0-000 (in-service 9/04)	1
Varian star 3400CX GC (in-service 9/04)	1
Varian saturn 2000 GC/MS (in-service 9/04)	1

**Metals and Wet Chemistry Equipment**

	<b>Quantity</b>
Spectro flame modula ICP	1
Perkin elmer mercury analysis with PE 2380	1
Pump for mercury analyzer	1
Spectrophysics strip recorder	1
Varian 8000 zeeman graphite furnace AA	1
Blue M magniwhirl water bath	1
Dionex SX 500 ion chromatograph	1
Dionex IC, ID# MLCH-18A	1
Dionex IC, ID# MLCH-18B	1

Dionex auto sampler.....	1
Dohrman total organic carbon analyzer with auto sampler.....	1
Beckman DU-64 UV-VIS spectrophotometer.....	1
Labconco kjeldahl rapid still.....	1
Labconco kjeldahl digester.....	1
2 place zero-headspace extractor.....	1
6 place ICLP extractor.....	1
TCLP filtration unit.....	1
HACH 2100A turbidity meter.....	1
YSI model 58 oxygen analyzer.....	1
Orion EA940 pH/specific ion meter.....	1
Constant temperature oven 104°C.....	1
Constant temperature oven 180°C.....	1
Dubuque muffle furnace.....	1
American scientific products 2 decimal place balance.....	1
American scientific products 4 decimal place balance.....	1
Mettler analytical balance.....	1
Ohaus analytical balance.....	1
Class "S" calibration weights.....	1
HACH DR/4000U.....	1
HACH COD digester.....	1
SCP science hot block.....	1
Accuement AR25 pH/ion meter.....	1

#### Microbiology Equipment

#### Quantity

IDEXX collert system.....	1
Millipore MF-incubator#2.....	1
Market forge steriomatic model STM-E autoclave.....	1
Millipore 3 place filtration manifold.....	1
Millipore MF incubator #1.....	1
SteroMasterII fisher model SPT-I1H.....	1
UV lamp model UVGL-25.....	1
Millipore UV sterilizer.....	1
Precision incubator #2 model 805.....	1
Precision incubator #1 model 805.....	1
10mL fixed volume micropipettor.....	1
Millipore 6 place filtration manifold.....	1
Steward stomacher 400.....	1
Precision incubator.....	1
Drummond pipet aid.....	1
3M 1.0mL pipettor.....	1
3M 5.0 mL pipettor, ID# MLCH-72.....	1
3M 5.0 mL pipettor, ID# MLCH-73.....	1
VWR dual stir/hotplate.....	1
Colony counter.....	1
Micromaster microscope.....	1
Ewave refrigerator/freezer #1.....	1
Whirlpool refrigerator/freezer #2.....	1
Whirlpool refrigerator/freezer #3.....	1
Precision science model 4 incubator.....	1
Precision science thelco model 6.....	1

#### Miscellaneous Equipment

#### Quantity

Kenmore refrigerator/freezer.....	1
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Jewitt double-door refrigerator .....	1
Jordon double-door refrigerator .....	1
Precision water bath .....	1
Bockel steam bath .....	1
Class A pipets and graduated cylinders .....	40
Assorted pyrex beakers and flasks .....	65
Automated pipettors .....	1
NIST reference thermometer .....	1
Miscellaneous thermometers .....	4
Personal computer work stations .....	11
Software to support GC/MS, GC, IC, ICP, and GFAA .....	1

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
North Spring Branch Landfill Wyoming County, WV	Georgia Pacific, LLC James Holmes, PG, CHHM 133 Peach St. PO Box 105605 Atlanta, GA 30348-5605	Design, construction mgt., permitting, monitoring, and reporting for AMD passive treatment system	\$2,000,000	Construction completed in 2001. On-going monitoring and NPDES reporting.
Dents Run 3893 Retrofit	Bennett Branch Watershed Association	Design of recycling Alkaline Addition module for Vertical Flow Wetland Ponds	\$25,000	95%
May Hollow 49 passive Treatment System	Cameron County Conservation District	Design of Passive Treatment System for a Deep Mine Discharge	\$250,000	95%
Ryerson Station State Park Dam, Greene County, PA	Commonwealth of Pennsylvania, Dept of Conservation and Natural Resources	Evaluate Potential Causes of Dam Failure in an Area of Permitted Longwall Mining	\$2,000,000 Study Cost	95%
TOTAL NUMBER OF PROJECTS:			TOTAL ESTIMATED CONSTRUCTION COSTS: \$	





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)
Fall Brook - active AMD treatment system Tioga County, PA	Tioga County Concerned Citizens Committee	\$1,000,000	2007	No
Dents Run - Site 3893 AMD Passive Treatment System Elk County, PA	U.S. Army Corps of Engineers	\$600,000	2006	Yes
Osage Mine Complex	West Virginia Department of Environmental Protection 105 South Railroad Street Phillippi, WV 26416	\$206,000	2005	Yes
Marjol Battery Site AML/Subsidence Investigation	Borough of Throop, Sanderson Street, Throop, PA	\$250,000 Study and Litigation	2006	No
S.R. 3028 Presto-Sygan Road Landslide Remediation & Deep Mine Grouting	PennDOT District 11-0 45 Thoms Run Road Bridgeville, PA 15017	\$750,000	2008	No
S.R. 837 Landslide Stabilization & AMD Remediation	PennDOT District 12-0 825 North Gallatin Ave Ext. Uniontown, PA 15401	\$2,000,000	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
N/A					

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

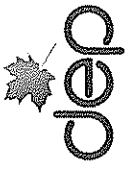
Please see Section 1 - attached response.

20. The foregoing is a statement of facts.

Signature:  Title: Regional Office

Printed Name: Samer H. Petro, PE

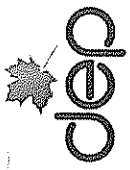
Date: 04/26/10



West Virginia Department of Environmental Protection

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*Section 3 – AML and Related Project Experience Matrix  
(Attachment “C”)*



West Virginia Department of Environmental Protection

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*Section 4 – Key Personnel Resumes*



YEARS EXPERIENCE WITH FIRM: 9

YEARS EXPERIENCE WITH OTHER FIRMS: 7

**EDUCATION:**

B.S., Civil Engineering, University of Pittsburgh, 1993

**REGISTRATIONS/CERTIFICATIONS:**

Registered Professional Engineer (Pennsylvania, 1999)

**PROFESSIONAL AFFILIATIONS AND PUBLICATIONS:**

American Society of Civil Engineers

**CURRENT RESPONSIBILITIES:**

**Senior Civil Engineer Clearfield Gannett Fleming Office** responsible for completion of engineering, and construction management services to private industry and federal and state agencies. Serves as senior civil engineer for land development and environmental projects involving: hydraulic/hydrologic analysis and design of stormwater management systems; preparation of erosion and sedimentation control plans; design of sanitary sewer and potable water systems and other infrastructure features; geotechnical design of foundations, retaining structures, earth embankments and impoundments; surface water monitoring; wetland mitigation planning and design; stream and riparian ecosystem restoration; application of passive wetland water treatment systems; environmental and ecological impact assessments; water quality investigations; environmental liability and risk analyses; and related remedial investigations, plans and designs.

**SUMMARY OF EXPERIENCE:**

**Harrison Hydrologic Study and Treatment Alternatives Analysis, Haywood, WV, Allegheny Energy.** Senior Civil Engineer assisting in the development of passive treatment alternatives for metals-contaminated coal combustion byproduct leachate, acid mine drainage, and sediment-contaminated road runoff at a large power generating facility. Performed a detailed economic and technical feasibility study for five potential sites and systems for treatment. Modeled existing and future surface runoff conditions over a complex area of disposal sites, power plant facilities, and piping networks. The final design of the treatment facilities will consist of a combination pumped and gravity drain influent collection system and a passive wetland treatment system consisting of aerobic wetlands, anaerobic wetlands, a vertical flow reactor, and an equalization basin for the removal of hexavalent chromium, selenium, iron, and aluminum from disposal area leachate.

**Mosquito Creek Acid Abatement Project, PA, Mosquito Creek Sportsman Association** Senior Civil Engineer responsible for hydrologic and hydraulic design and quality assurance/control of plans and specifications for the design of passive acid abatement systems to remediate acid rain impacts to Mosquito Creek and associated trout fisheries. Project used vertical flow reactors (anaerobic compost/limestone cells) to generate alkalinity and neutralize acidity in several headwaters streams in the watershed. Results are being used to obtain funding for additional systems to remediate the entire watershed. Responsibilities included hydrologic/hydraulic analyses, design of collection channels, preparation of E&S and NPDES permits, preparation of engineering cost estimates, plans, specifications, and bid documents.

**Dents Run Site 3888 Passive Treatment, PA, US Department of the Army.** Senior Civil Engineer responsible for hydrologic and hydraulic design and quality assurance/control of plans and specifications for the for design of two passive treatment systems to remediate three abandoned deep mine discharges impacting Dents Run. Treatment was phased to collect data for future system component design on the steep, constrained construction sites. Initial treatment included installation of two open limestone channels for acidity removal, with results from post-construction monitoring to determine what additional acidity reduction components were necessary. Project involved development of the first performance prediction model for open limestone channels based on channel velocity. Responsibilities included hydrologic/hydraulic analyses, design of collection channels, preparation of E&S and NPDES permits, preparation of engineering cost estimates, plans, specifications, and bid documents.

**Dents Run Site 3893 Passive Treatment, PA, US Department of the Army.** Senior Civil Engineer responsible for hydrologic and hydraulic design and quality assurance/control of plans and specifications for the for design of two passive treatment systems and remediation plan for an abandoned surface mine to remediate acid mine discharges impacting Porcupine Hollow, which is a tributary of Dents Run. Treatment consisted of two separate systems with three vertical flow wetlands (VFW's) and oxidation/precipitation basins before and after the VFW's. Responsibilities included hydrologic/hydraulic analyses, design of diversion channels/stream relocations, preparation of E&S and NPDES permits, preparation of engineering cost estimates, plans, specifications, and bid documents.

**Dents Run Site 1934 Passive Treatment Concept Plan, PA, US Department of the Army.** Senior Civil Engineer responsible for hydrologic and hydraulic design and quality assurance/control of plans and specifications for the conceptual design of two passive treatment systems to remediate two acid mine drainage sources in a heavily impacted watershed. One abandoned deep mine discharge shows extremely high iron and aluminum loadings, and conceptual design required large scale sludge removal and storage planning, and development of predictive methods for estimating the life expectancy of vertical flow wetlands for acidity removal under these conditions. The second project site involves multiple contaminated seeps, some of which cannot be collected for a conventional gravity-flow passive system. On this site, the uphill seeps will be collected and treated to generate a highly alkaline discharge, which will then be combined with the acidic discharges downhill in an existing wetland area to generate a net alkaline total flow. Passive treatment planning is concurrent with re-mining efforts on the site, and it is expected that reclamation activities will improve water quality, allowing the treatment systems to be downsized before final design and construction.

**Kettle Creek Bio-Capping project, Westport, PA. Trout Unlimited.** Senior Civil Engineer responsible for grading plans and conveyance channel designs for a 58-acre abandoned surface coal mine reclamation project. The project also incorporated an engineered soil using a by-product of the vegetable leather tanning process to develop a composted soil amendment product. Food plots and vegetative habitat designs were incorporated into the project to provide food and cover for the growing Eastern Elk population, which inhabit the area. Completed project plans, technical specifications, NPDES permitting, E&S plans, bid documents, engineer's cost estimate, and provided construction administration and oversight.

**Farr Tipple AMD Treatment System**, *Ohio Department of Natural Resources, Division of Mineral Resources Management.* Responsible for the preparation of the grading plan, erosion/sedimentation control plan, specifications, bid package and construction cost estimate for the treatment of a deep mine related acid mine discharge within the Huff Run Watershed.

**Simmons Run AMD Treatment System**, *Ohio Department of Natural Resources, Division of Mineral Resources Management.* Responsible for the preparation of the grading plan, erosion/sedimentation control plan, specifications, bid package and construction cost estimate for the treatment of a deep mine related acid mine discharge within the Simmons Run Watershed.

**Mine Waste Impoundments.** Principal Plan Reviewer on more than 20 high-hazard mine tailings dams. Responsible for the review of hydrologic, hydraulic, geotechnical, and geologic portions of the design of large mine tailings dams throughout the United States. Provided technical assistance to field inspection personnel during mitigation of hazards identified at large coal and metal/non metal tailings dams. Specific tasks include:

- Hydrologic analysis of watershed above tailings impoundment in order to determine the peak rainfall intensity and corresponding runoff to the impoundment.
- Hydraulic analysis of outlet works and appurtenances in order to determine outlet rating curves and flood routing analyses to ensure the appropriate sizing of the impoundment with respect to overtopping and freeboard requirements.
- Geologic analysis of project area in order to determine the extent and characteristics of subsurface soils and rock for consideration in embankment dam design.
- Geotechnical design of embankment dams, including slope stability, foundation engineering of appurtenances and thrust blocks, dynamic slope stability and liquefaction analysis (earthquake engineering)
- Structural analysis of reinforced concrete structures such as spillways and retaining walls.

YEARS EXPERIENCE WITH FIRM: 12

YEARS EXPERIENCE WITH OTHER FIRMS: 35

**EDUCATION:**

B.S. 1963 - Civil Engineering

**REGISTRATIONS/CERTIFICATIONS:**

1971 - Civil Engineering

State of Ohio - No. 65834

Commonwealth of Pennsylvania - No. 017274-E

MSHA Mine Safety Certified, Surface &amp; Coal

**CURRENT RESPONSIBILITIES:**

**Vice President of the Clearfield Office of Gannett Fleming and Senior Engineer** - responsible for and directly involved in the coordination and preparation of state and federal permit applications for surface and underground coal mining, non-coal mining, mine reclamation, industrial facility siting, land development and subdivision plans, water resource development projects, and waste disposal plans. Also responsible for and directly involved in the coordination and preparation of private and government-related civil engineering projects, including municipal services plans and specifications, industrial facility siting, land development and subdivision plans, water resource development projects, and waste disposal plans. Project responsibilities will include the design and review of waste water collection lines and pumping facilities associated with development plans and treatment system expansion and upgrades.

**SUMMARY OF EXPERIENCE:**

Over 35 years experience as a project manager/engineer on major civil engineering projects for water resources, transportation, environmental compliance, land development and mining, with extensive experience in the preparation and review of engineering plans and specifications relating to the various project disciplines. Experience also includes project presentations to the general public and negotiations with regard to regulatory issues. Projects have included an ongoing working relationship with regulatory agencies, including ODNR, PADEP, PADOT, and local municipalities.

**Farr Tipple AMD Treatment System**, *Ohio Department of Natural Resources, Division of Mineral Resources Management*. Project Manager for the preparation of the design of Passive Treatment System, including an Anoxic Limestone Drain, and aerobic wetland cells, preparation of grading plan, erosion/sedimentation control plan, specifications, bid package and construction cost estimate for the treatment of a deep mine related acid mine discharge within the Huff Run Watershed.

**Simmons Run AMD Treatment System**, *Ohio Department of Natural Resources, Division of Mineral Resources Management*. Project Manager for the preparation of the design of the Passive Treatment System, including vertical flow reactors and aerobic wetland cells, preparation of grading plan, erosion/sedimentation control plan, specifications, design of a beaver dam



leveler, wetland enhancement, emergency spillway design, bid package and construction cost estimate for the treatment of a deep mine related acid mine discharge within the Simmons Run Watershed.

**Mosquito Creek Phase 1 Acid Abatement Project, Clearfield County, PA, Mosquito Creek Sportsman Association.** Project engineer responsible for project oversight and system design of a passive acid abatement system to remediate acid rain impacts to Mosquito Creek. System components include a vertical flow wetland cell and a self-regulating inlet structure to attenuate storm surges into the wetland cell while still capturing a portion of the stream baseflow.

**Dents Run Site 3888 Passive Treatment, PA, US Department of the Army.** Project engineer responsible for coordinating design and permitting activities of two passive treatment systems to remediate three abandoned deep mine discharges impacting Dents Run. The system consists of discharge collection devices designed to capture non-channelized seeps, two open limestone channels for acidity removal and a settling pond to remove precipitates prior to discharging the treated water to the adjacent stream. Project involved development of the first performance prediction model for open limestone channels based on channel velocity. Initial construction will be completed in 2003.

**Arnot No. 2 Mine Drainage Treatment System, Arnot, PA, Babb Creek Watershed Association.** Project engineer in charge of project oversight and coordination for the design of a passive treatment system for an acidic deep mine discharge impacting a headwaters cranberry bog containing threatened plant species. The system consists of a device to capture the mine discharge, two vertical flow wetland cells, an oxidation/precipitation cell, and a manganese-oxidizing bacteria cell. The system includes an innovative method of flow splitting to two vertical flow wetland cells, allowing treatment of the discharge without passing the entire flow volume through the cells.

**Antrim Mine Drainage Treatment Facility, Antrim, PA, Antrim Mining Company, Inc.** Project Engineer responsible for design and project oversight of a 1 mgd collection and treatment facility for an acid mine drainage discharge from an abandoned underground coal mine. The project included evaluation of alternative treatment designs utilizing a variety of chemical agents, prediction of precipitate accumulation and clean-out schedules, design of precipitate drying beds, design of a pumping and conveyance system to transport the mine water to the treatment facility, and permitting required to obtain approval of the treatment concept and system design.

YEARS EXPERIENCE WITH FIRM: &lt;2

YEARS EXPERIENCE WITH OTHER FIRMS: 27

**EDUCATION:**

BS/1981/Mining Engineering

**PROFESSIONAL REGISTRATION(S):**

P.E.: Pennsylvania - No. 35160-E (1986)

**PROFESSIONAL AFFILIATIONS:**

SME - Society for Mining, Metallurgy and Exploration

**CURRENT RESPONSIBILITIES:**

**Project Engineer** responsible for coordination and preparation of state and federal permits for surface and underground coal mining, non-coal mining, mine reclamation, coal preparation facilities, and industrial facility siting. Mr. Bloom is also directly involved with the preparation and coordination of land development plans, valuation studies, wetland evaluations, highway occupancy permits, air quality permits and earth disturbance permits. Project responsibilities have also included conducting hydrologic assessments relative to erosion and sediment (E&S) pollution control design, mining operation plans, soils evaluations, and reclamation and revegetation plans. Mr. Bloom is skilled in conducting and supervision of drilling programs, construction of monitoring wells, surface and groundwater monitoring, and installation of flow-monitoring devices, pumping tests, and groundwater modeling.

**SUMMARY OF EXPERIENCE:**

Over 27 years experience as a project engineer on civil and mining engineering projects, environmental compliance, land development with extensive experience in the preparation of cost estimates, bid documents and specifications, and construction supervision. Projects have included on-going working relationship with regulatory agencies, including PADEP, PADOT, BAMR, local municipalities, and County Soil Conservation Services. Specific Design Engineer experience includes the design of passive treatment systems including metered flow collection boxes with bypass structures for flows beyond peak design, flow conveyance and flow equalization structures, vertical flow ponds, wetland cells, and polishing ponds. In addition, evaluations of site construction suitability and recommendations to facilitate construction have been prepared. Material specifications and contractor guidelines were provided as well. Permit approval for construction NPDES and Stream Encroachments were completed.

Design engineering for treatment systems to address mine drainage from an underground mines including assessment of projected flow quantity and quality, design of treatment plants, detention ponds, and preparation of permit approval materials have been prepared.

YEARS EXPERIENCE WITH FIRM: 5

YEARS EXPERIENCE WITH OTHER FIRMS: 10

**EDUCATION:**

B.S.C.E., Structural Engineering, West Virginia University, 1987

M.S.C.E., Structural Engineering, West Virginia University, 1993

**PROFESSIONAL REGISTRATION(S):**

P.E.: Ohio - No. 66132 (2001)

West Virginia - No. 15710 (2003)

**PROFESSIONAL AFFILIATIONS AND PUBLICATIONS:**

American Society of Civil Engineers

Association for Bridge Construction and Design

Steering Committee Member, National Conference on Integral Abutment and Jointless Bridges, 2005. Conference sponsored by FHWA and WVDOT.

**CURRENT RESPONSIBILITIES:**

**Senior Structural Engineer** responsible for designing and analyzing highway bridges and other transportation-related structures.

**SUMMARY OF EXPERIENCE:**

**S.R. 28 over Yutes Run Road Bridge, Allegheny County, PA, Pennsylvania Department of Transportation, District 11-0.** Project Bridge Engineer for the widening of a three-span continuous reinforced concrete slab bridge supported on an integral stub abutment. The structure is on a curved alignment.

**Headsville Bridge Replacement, Mineral County, WV, West Virginia Department of Transportation, Division of Highways.** Project Engineer responsible for designing a bridge replacement. Work includes development of structure geometry; type, size, and location studies; foundation submissions; final design submission; and construction cost estimates.

**King's Covered Bridge, Somerset County, PA, Pennsylvania Department of Transportation, District 9-0.** Structural Engineer assisting in the rehabilitation design of a covered bridge.



YEARS EXPERIENCE WITH FIRM: 3

YEARS EXPERIENCE WITH OTHER FIRMS: 10

**EDUCATION:**

B.S., Civil Engineering, West Virginia University, 1996

**PROFESSIONAL REGISTRATION(S):**

West Virginia - No. 015304 (2002) Florida - No. 61143 (2004)

**PROFESSIONAL AFFILIATIONS:**

National Society of Professional Engineers

**CURRENT RESPONSIBILITIES:**

**Project Manager** for the West Virginia Regional Office responsible for the design of highway and airport projects, including right-of-way, site development, stormwater, utilities, signing and pavement marking, erosion and sediment pollution control, final cross sections, quantities, and report preparation. Also assists in client consultation, budget preparation, and project scheduling.

**SUMMARY OF EXPERIENCE:**

**Evansdale Campus Bridge-Garage, Morgantown, WV, West Virginia University (WVU).** Project Engineer responsible for preliminary parking garage layout and access road design for a 1,000-space parking garage at the WVU Coliseum.

**North Shore Connector, Pittsburgh, PA, Port Authority of Allegheny County/DMJM+Harris.** Project Engineer responsible for the final design of a 12-inch waterline relocation, including quantity calculations, specification review, and plan preparation. Performed final design of erosion and sedimentation control facilities including quantity calculations, specification review, and plan preparation.

**Final Design, S.R. 0022, Section B10, Westmoreland County, PA, Pennsylvania Department of Transportation (PennDOT), District 12-0.** Project Engineer responsible for updating stormwater management detention facilities and stormwater drainage systems. Tasks include verifying detention facility and drainage system capacities, updating facilities as necessary, and generating detailed storm water management and roadway drainage reports following PennDOT guidelines.

**WV 705 Connector Design Study Report, Monongalia County, WV, West Virginia Department of Transportation, Division of Highways (WVDOH).** Project Manager responsible for preliminary roadway design of an approximately three-mile section of roadway to connect the WV 705 Connector to Beechhurst Avenue in downtown Morgantown, including an interchange at the intersection with the WV 705 Connector. The main alignment follows the Falling Run Valley with multiple alignments between University Avenue and Beechhurst Avenue. This portion of the project required significant coordination between WVDOH, the City of Morgantown, West Virginia University, and developers along the corridor.

YEARS EXPERIENCE WITH FIRM: 14

YEARS EXPERIENCE WITH OTHER FIRMS: 0

**EDUCATION:**

B.S., Civil Engineering, University of Pittsburgh, 1995

**PROFESSIONAL REGISTRATION(S):**

P.E.: Pennsylvania - No. PE060736 (2004)

**PROFESSIONAL AFFILIATIONS:**

Society of American Military Engineers

Secretary, Pittsburgh Post

American Society of Civil Engineers

Deep Foundations Institute

**CURRENT RESPONSIBILITIES:**

**Geotechnical Project Engineer** responsible for design on various geotechnical and environmental projects, including layout and implementation of field exploration programs, site reconnaissance, drilling inspection, soil and water sampling, and design activities. Also develops and prepares geotechnical reports, technical specifications, and cost estimates.

**SUMMARY OF EXPERIENCE:**

**S.R. 0268, Section 250, Petrolia Bridge Replacement over South Branch of Bear Creek, Petrolia, PA, Pennsylvania Department of Transportation (PennDOT), District 10-0.** Geotechnical Engineer responsible for performing a hydrologic and hydraulic study to evaluate the hydraulic impacts of a proposed single-span bridge replacement. The hydraulic study included the review and incorporation of an existing Federal Emergency Management Agency (FEMA) study of the project area, review of potential impacts from three Pennsylvania Department of Environmental Protection (PADEP)-regulated dams within the project drainage area, and the development of peak runoff rates using PennDOT-accepted methodology. Hydraulic analyses were performed using the HEC-RAS software with the complex model for the well-developed project site, including numerous structures, retaining walls, and an additional bridge within the limits of study. The model was developed using the MicroStation CADD software by incorporating site-specific survey data. A hydrologic and hydraulic report was ultimately prepared in accordance with PennDOT and PADEP requirements, providing a summary of the evaluations performed and a flood-potential risk assessment based upon the results of the analyses.

**S.R. 0279, Section A64, I-279 Connector, Allegheny County, PA, Pennsylvania Department of Transportation, District 11-0.** Geotechnical Project Engineer responsible for final geotechnical design of bridge foundations and roadway approach embankments for a highway improvement project on Pittsburgh's North Shore. Foundation alternatives considered included H-piles and caissons to support the bridge structure to be constructed on the Allegheny River floodplain deposits. Performed extensive coordination and analyses at a pier location, which is to be constructed within 4 feet of a 11-foot-diameter brick sewer. Performed

geophysical studies and manhole camera efforts to evaluate the condition and exact location of the sewer. The investigations were also used in developing a vibration-monitoring program for use during construction of the pier. Recommended caisson-supported substructures in a structure foundation report based on cost and constructability at the sewer location.

**Washington School Dam Inspection and Modification, Washington County, PA, *Washington County School District.*** Project Engineer responsible for the annual inspection of a high-hazard dam that serves as a scenic area and stormwater management facility. Performed the inspections in accordance with Pennsylvania Department of Environmental Protection standards, completed the standard inspection checklist form, collected relevant photographs, and developed a site sketch indicating areas of concern. Ongoing work includes the planned modification of the dam to function solely as a stormwater management facility.

**Redbank Valley Dam Rehabilitation, Clarion and Armstrong Counties, PA, *Redbank Valley Municipal Authority.*** Project Engineer responsible for developing and implementing a geotechnical investigation report to support the rehabilitation of a concrete dam on Redbank Creek. The investigation included background research into soils, geologic, and hydrologic data for the site. Designed and implemented a geotechnical subsurface investigation to evaluate potential foundation conditions for proposed concrete structural work. Permeability testing of bedrock was performed to evaluate seepage potential beneath the dam. Prepared a geotechnical investigation report to support the final structural design.

**S.R. 0028, Section A14, Sarah Heinz Retaining Wall, Allegheny County, PA, *Pennsylvania Department of Transportation (PennDOT), District 11-0.*** Geotechnical Project Engineer responsible for the preliminary design of replacement alternatives for a failing mechanically stabilized earth (MSE) wall located in a heavily urban area. Provided coordination with the adjacent land development owner and contractor to determine projected land use and available right of way. A detailed review of historic roadway and environmental record information was also performed. Analyses included the development of feasible alternatives that could be constructed within limited right of way, cost comparisons, preliminary geotechnical evaluations of existing subsurface information, and preliminary geotechnical parameters to support type, size, and location (TS&L) design and development. A Reconnaissance Soils and Geological Engineering Report was provided to support the preliminary TS&L submission for the ultimate alternative selection by PennDOT.

**S.R. 0058, Section 150, Foxburg Bridge Replacement, Clarion and Armstrong Counties, PA, *Pennsylvania Department of Transportation (PennDOT), District 10-0.*** Geotechnical Project Engineer responsible for final geotechnical design of a four-span bridge over the Allegheny River. Project constraints included limited right-of-way, maintenance of traffic during construction, and environmentally sensitive river life. The structure included large-diameter (102-inch) caissons at pier locations. Developed special provisions to provide quality control during the construction of the large caissons in the form of Crosshole Sonic Logging, void repair methods, and downhole camera inspection, in conjunction with PennDOT and its Bridge Quality Assurance Division. Analyses for the caissons included both group and single-caisson

evaluations of lateral loading cases and axial capacity. Pile-supported abutments included vertical piles to support lateral loads, due to limited space for the installation of battered piles at two wingwalls that would interfere with the existing structure. Piles were evaluated for axial capacity and lateral capacities. Corrosion effects were considered for both piles and caissons. A Structure Foundation Report was prepared to support the final design of the structure.

**Annual Dam Inspections, Washington County, PA, Washington County Commissioners.** Professional Engineer responsible for annual inspections of 10 high-hazard flood-control dams that are owned and operated by Washington County. Performed the inspections in accordance with Pennsylvania Department of Environmental Protection (DEP) standards, completed the standard inspection checklist form, collected relevant photographs, and developed a site sketch indicating areas of concern.

**South Hills Rail Facility, Allegheny County, PA, Port Authority of Allegheny County.** Geotechnical Engineer responsible for investigation and remediation design of a differential floor heaving problem at a light rail maintenance facility. The investigation involved subsurface soil sampling and laboratory testing for expansive properties of expansive clays and slag material at key locations. Developed remediation alternatives that could be performed without significant disturbance to the facility's 24-hour operations.

**Waterford Energy Facility, Retaining Wall Mitigation, Waterford, OH, Bowen Engineering Corporation.** Geotechnical Engineer responsible for field investigation, evaluation of mitigation alternatives, ultimate design, and report preparation for a grout bag retaining system to shore an existing distressed gabion wall. The complex project requires construction techniques that can be performed by hand laborers, due to limited access to the existing wall on a steep slope.

**S.R. 885, Section A03, Boulevard of the Allies Bridge Replacement over Forbes Avenue, Pittsburgh, PA, Pennsylvania Department of Transportation, District 11-0.** Assistant Project Manager responsible for overseeing and implementing geotechnical investigations for the replacement of two bridge structures and the design of new roadways and six retaining walls. Also assisted with client and subconsultant coordination, which are a critical part of the project due to ongoing revisions to the project design requirements necessary to satisfy state, federal, and local interests. Design tasks include subsurface investigations, laboratory testing, geotechnical instrumentation monitoring, geophysical investigations, foundation designs, retaining wall designs, and geotechnical reports.

**S.R. 3052, Section B01, Ambridge-Aliquippa Bridge, Beaver County, PA, Pennsylvania Department of Transportation, District 11-0.** Senior Geotechnical Project Engineer responsible for an environmental assessment of potentially hazardous waste conditions within five preliminary alignments being investigated for the replacement of a bridge. The project involved office and field investigations, including regulatory file searches, interviews, review of aerial photographs, and field verification of office findings. The results of the investigation were reported in a Phase I Environmental Site Assessment, which details the existence of potentially hazardous materials at each alignment. Recommendations include a preferred alignment based upon hazardous waste concerns.

YEARS EXPERIENCE WITH FIRM: 21

YEARS EXPERIENCE WITH OTHER FIRMS: 2

## EDUCATION:

B.S., Geology, Lake Superior State College, 1983

## PROFESSIONAL REGISTRATION(S):

P.G.: Wyoming - No. PG-893 (1992)

Kentucky - No. 1594 (1994)

Pennsylvania - No. 001237-G (1995)

MSHA Mine Safety Certified Surface, Coal, Metal, and Nonmetal (2005)

## CURRENT RESPONSIBILITIES:

**Senior Project Manager and Geologist** responsible for directing geologic and hydrogeologic projects involving the study, evaluation, and assessment of earth materials. Areas of responsible charge include geologic interpretation; geologic structures evaluation, groundwater and soils contamination problems; solid waste disposal; public water supply development; abandoned mine land reclamation; aquifer testing; remedial design; wellhead protection; and earth resources development.

## SUMMARY OF EXPERIENCE:

**Toland Quarry, Mount Holly Springs, PA, Hempt Brothers, Inc.** Project Manager responsible for completing geologic and hydrogeologic investigations in support of quarry expansion permitting. The proposed quarry expansion will increase the quarry to approximately 860 acres. Permitting issues included upgrading the existing groundwater monitoring system and improving sedimentation controls.

**Locust Point Quarry, Mechanicsburg, PA, Hempt Bros., Inc.** Project Hydrogeologist responsible for evaluating the impact of quarry dewatering on nearby domestic wells. Determined drawdown anisotropy related to local geologic structures, predicted drawdowns associated with proposed quarry floor deepening, and supervised a domestic well monitoring program. This project also included an extensive VLF (WADI) electromagnetic geophysical survey of local geologic structures surrounding the quarry site. Interfaced with the Bureau of Mining and Reclamation for permitting purposes.

**Abandoned Mine Land Reclamation, Illinois Department of Natural Resources, Office of Mines and Minerals.** Project Manager responsible for investigative services in support of abandoned mine land reclamation projects in the northern and central Illinois coal fields. Designed and implemented investigations into geologic, geotechnical, and agronomic conditions at numerous former mine sites. Work activities include topographic mapping, soil sampling, slope stability and embankment analyses, and evaluation of mining structures and shafts.

**Quarry Expansion Permitting, Cumberland County, PA, Hempt Bros., Inc.** Project Manager responsible for surface and subsurface investigations and permit application preparation for a proposed quarry expansion encompassing 270 acres. The expansion area is situated adjacent to existing quarry pits in an area with complex carbonate geology. Site investigations have



included evaluation of geologic structural features including several prominent faults which have been evaluated to assess their individual and collective influence on site hydrology.

**Mine Fire Investigation, Throop, PA, Borough of Throop.** Project Geologist responsible for evaluation of conditions in the vicinity of an illicit dump fire situated within coal mine waste piles near the cropline of the No. 1 and No. 2 seams of the Eddy Creek shaft section of the former Olyphant Colliery. Investigation included coordination of site monitoring with personnel from the Office of Surface Mining Reclamation and Enforcement (OSMRE), site reconnaissance, collection of subsurface gas samples, and thermal measurements. Gas samples were collected using summa canisters and were analyzed for hydrogen, nitrogen, oxygen, carbon monoxide, carbon dioxide, and methane using ASTM Method 1945.

**Eastern Industries Kutztown Quarry, Berks County, PA, Eastern Industries, Inc.** Senior Hydrogeologist responsible for conducting permitting activities for the quarry which produces lime and aggregate products from the Muhlenberg Member of the Allentown Formation. Facilitated increased quarry size by developing dewatering programs which included a pipeline and an Underground Injection Control Permit. The injection system consists of five wells constructed to reinfect water generated by quarry dewatering into the subsurface beneath the current quarry floor. The wells were deeply cased and accepted a high percentage of the quarry discharge. Assessed proposed quarry discharges into Sacony Creek as part of the permitting effort. The creek passes through an exceptional value wetland and near a community water supply well field. Conducted hydrologic modeling of various discharge scenarios to evaluate stream stage and channel characteristics.

**Eastern Industries Martin's Creek Quarry, Northampton County, PA, Eastern Industrial, Inc.** Senior Hydrogeologist responsible for predictive evaluation of groundwater table modifications in the vicinity of a proposed sand and gravel quarry. The proposed quarry will extract Quaternary sand and gravel deposits from a surface mine located at the confluence of Martin's Creek and the Delaware River. Presented assessment of minimal probable hydrologic impact to local government officials.

**Temple Quarry, Berks County, PA, Muhlenberg Water Authority.** Project Hydrogeologist responsible for examining the feasibility of developing the flooded quarry for water supply purposes. Conducted site reconnaissance and environmental assessment investigations to determine the feasibility of utilizing the abandoned quarry site to build a water treatment plant. Quarrying at the 38-acre site ceased in approximately 1990 and the pit is filled with approximately 200 feet of water.

YEARS EXPERIENCE WITH FIRM: 2

YEARS EXPERIENCE WITH OTHER FIRMS: 24

**EDUCATION:**

B.S., Environmental Geology, Juniata College, 1980

M.S., Geology, Syracuse University, 1982

**PROFESSIONAL REGISTRATION(S):**

P.G.: Pennsylvania - No. PG002575G (1995)

L.R.S.: West Virginia - No. 218 (2003)

**PROFESSIONAL AFFILIATIONS:**

Pennsylvania Council of Professional Geologists

**CURRENT RESPONSIBILITIES:**

**Environmental Project Manager** responsible for supporting and developing environmental site remediation services for a wide variety of projects, including energy production, collection, storage, and transmission facilities and Brownfield sites.

**SUMMARY OF EXPERIENCE:**

**Phase I and Phase II Site Characterization, Donora, PA, Mon Valley Sewage Authority.** Environmental Project Manager responsible for a Phase I and Phase II environmental site assessment at scrap disposal yard targeted for construction of a wet-weather equalization facility as part of a long-term control plan, which is required by the Pennsylvania Department of Environmental Protection (PADEP). The Phase I assessment was conducted in accordance with ASTM 1527, Standard Practice for Environmental Site Assessments. The site was formerly part of an ore storage yard used by U.S. Steel Corporation's Donora Zinc Mill. A Phase II investigation was performed in response to recognized environmental conditions (RECs) identified on the property, including the presence of abandoned and leaking drums. The Phase II investigation included notifying the local PADEP office of the RECs and sampling soil for potential constituents of concern identified for the REC during the Phase I investigation site.

**Phase II Site Characterization, Hays Mine Clearwell Expansion, Pittsburgh, PA, Pennsylvania American Water.** Environmental Project Manager responsible for a Phase II environmental site assessment completed at a former auto repair and salvage yard being redeveloped for a treatment plant expansion. The work included a reconnaissance of the site; a reconnaissance of adjoining properties from the site and/or public rights-of-way; and review of reasonably obtainable agency records, database information, aerial photographs, and historical information to ascertain potential historical site conditions that could indicate a potential environmental impact. A soil sampling investigation was completed to assess whether current site conditions presented potential environmental concerns.

**Groundwater Sampling, PA, Confidential Client.** Environmental Project Manager responsible for providing support for site investigation, remediation, and closure under Pennsylvania Department of Environmental Protection Act 2 standards for a trichloroethylene (TCE) release. Supported the project team for the review and revision of a site conceptual model to explain interactions of contaminants with the local water well supply system and the Allegheny River. Site work included the assessment of remedial alternatives to mitigate indoor air intrusion and air quality monitoring.

**Underground Storage Tank Investigation, PA, Confidential Client.** Environmental Project Manager responsible for site investigation, remediation, and closure under Pennsylvania Department of Environmental Protection (PADEP) Act 2 standards for a former underground storage tank release. Tasks include preparing and implementing work plans, coordinating activities with the PADEP case manager, and preparing site closure reports.

**Underground Storage Tank Investigation, PA, Confidential Client.** Environmental Project Manager responsible for preparing sampling plans and implementing a site groundwater investigation for post-remediation compliance with Pennsylvania Department of Environmental Protection (PADEP) underground storage tank and Act 2 regulations. The groundwater had been impacted by residual gasoline and diesel constituents with offsite impacts to designated wetlands. Responsible for preparing and implementing work plans, developing activities to demonstrate compliance for groundwater standards, coordinating activities with the PADEP case manager, and preparing site reports.

**Underground Storage Tank Investigation, PA, Confidential Client.** Environmental Project Manager responsible for preparing sampling plans and implementing a site groundwater investigation for post-remediation compliance with Pennsylvania Department of Environmental Protection underground storage tank and Act 2 regulations. A previous remediation had included oxygen release compound addition to the groundwater. Current groundwater conditions show impacts by residual gasoline and diesel constituents from an ineffective remediation, and potential new impacts from alternate sources. Responsible for developing a comprehensive conceptual site model to explain current conditions and prepare appropriate investigation and remediation measures.

**Waste Disposal, S.R. 0219, Section C09, Bradford Bypass Upgrade, McKean County, PA, Pennsylvania Department of Transportation, District 2-0.** Environmental Project Manager responsible for coordinating the disposal of investigative derived waste (IDW) collected from a drilling program. The IDW consists of drums containing contaminated soil, sealed drums of unknown content, and miscellaneous support materials. The work will properly classify and dispose of the IDW.

**PROFESSIONAL AFFILIATIONS:**

Pennsylvania Council of Professional Geologists  
Air & Waste Management Association

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YEARS EXPERIENCE WITH FIRM: 15

YEARS EXPERIENCE WITH OTHER FIRMS: 8

**EDUCATION:**

B.S., Geology, University of Pittsburgh, 1983

M.S., Civil Engineering, University of Maryland, 1994

**PROFESSIONAL REGISTRATION(S):**

P.G.: Pennsylvania - No. PG003199G (1996)

**CURRENT RESPONSIBILITIES:**

**Geotechnical Project Manager** involved in highway, water supply, and building projects. Responsibilities include supervising staff engineers and geologists; writing proposals; communicating with clients; preparing contract documents; developing, coordinating, and supervising subsurface investigations for highways, buildings, and slope stability evaluations; determining test-boring locations and depths; monitoring standard penetration test (SPT) and diamond core-drilling operations; and determining laboratory testing requirements and interpreting results. Also responsible for preparing geological, foundation engineering, and environmental-assessment reports. Duties include conducting geologic literature reviews, evaluating the published geologic information with respect to the project requirements, conducting geologic field views to study geologic landforms pertinent to the projects, and studying topographic maps and aerial photographs to identify any geologic features. In addition, conducts geologic mapping for proposed highway cuts, evaluates subsurface conditions, performs engineering evaluations, determines mine subsidence, and prepares geological, geotechnical, and environmental reports.

**SUMMARY OF EXPERIENCE:**

**Mine Subsidence Evaluation, Wanzco Residence, Allegheny County, PA, U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement.** Geotechnical Engineer responsible for investigating the extent of damage incurred to a residential structure caused by mine subsidence. Responsibilities included on-site subsurface investigation, evaluation of the subsurface conditions, review of aerial photographs, geologic literature review, evaluation of the available mine maps, preparation of boring logs, laboratory test data interpretation, and preparation of the geologic and geotechnical aspects of the report. Also conducted geotechnical analyses including bearing capacity and settlement computations.

**Mine Subsidence Evaluation, Salvitti Residence, Kennedy Township, Allegheny County, PA, U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement.** Geotechnical Engineer responsible for investigating whether the structural distress of a residential structure was related to mine subsidence. The project involved structural and geotechnical analyses. Responsibilities included planning and implementing the subsurface investigation, evaluating the subsurface conditions, inspecting the drilling operations, conducting a geologic literature review, assigning laboratory tests, and reviewing aerial photographs. Also evaluated the available mine maps, prepared boring logs, interpreted laboratory test data, determined the cause of distress, and developed a final written report with conclusions and recommendations for mine void remediation.

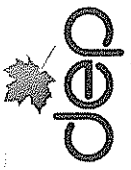
**Mae West Bend, S.R. 0008, Section A05, Construction Consultation, Allegheny County, PA, Pennsylvania Department of Transportation, District 11-0.** Geotechnical Project Manager responsible for the oversight of construction consultation for the geotechnical aspects of a highway improvement project. The project included an 80-foot-high, 500-foot-long rock cut slope and rockfall-protection system, soil-nail slope-stabilization system, two arch-culvert extensions, a single-span structure, and a 400-foot-long retaining wall.

**Township, Beaver County, PA, Pennsylvania Department of Transportation, District 11-0.** Geotechnical Project Manager responsible for final geotechnical design activities for the relocation of a single-span bridge and its roadway approaches. The project included evaluating foundation alternatives to avoid bearing on a local coal seam, and comparing foundations and spread footings on Class C concrete. Also involved were subsurface investigations, laboratory testing, bearing-capacity analysis, deep foundation and settlement evaluations, and geotechnical special provisions and details.

**Mae West Bend, S.R. 0008, Section A05, Final Design, Allegheny County, PA, Pennsylvania Department of Transportation, District 11-0.** Geotechnical Project Manager responsible for providing technical guidance for the design of approximately 4,000 feet of roadway relocation and improvement. Performed field reconnaissance of the project site and identified geologic features affecting the current and proposed rights-of-way. Implemented subsurface exploration and laboratory testing programs to determine the subsurface conditions for two arch-culvert extensions, a single-span bridge, a 400-foot-long retaining wall, and a soil-nail slope-stabilization system. Also evaluated cut-face slope configurations with respect to stability and rockfall potential for an 80-foot-high, 500-foot-long rock-cut slope. A rockfall-catchment zone for the site configuration in conjunction with national standards and the Colorado Rockfall Simulation Program was developed.

**Mon/Fayette Expressway, Uniontown to Brownsville, Design Management, Uniontown, PA, Pennsylvania Turnpike Commission (PTC).** Geotechnical Project Manager responsible for quality assurance of the geotechnical aspects of a design provided by ten design section consultants for the final design of a \$350 million section of proposed expressway. Responsibilities include managing, directing, and coordinating the geotechnical design work of the design section consultants, coordinating with PennDOT and PADEP; and acting as an extension of PTC's staff. Also responsible for developing and implementing streamlined management design processes necessary to provide the geotechnical design support.

**Woodmont Pump Station Subsurface Investigation, Martins Ferry, Belmont County, OH, City of Martins Ferry.** Geotechnical Project Manager responsible for investigating and analyzing the subsurface conditions for a water pump station experiencing foundation instability. Duties involved field investigation, including inspection of the drilling of all borings; development of a subsurface exploration program; subsurface analyses; slope stability analyses; evaluations and recommended improvements; and report preparation.



West Virginia Department of Environmental Protection

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*Section 5 – Representative Project Profiles*



## OSAGE MINE COMPLEX

Client: WVDEP

Location: Monongalia County, WV

Design Fee: \$38,000

Gannett Fleming provided engineering design and construction documents for the restoration of 5 sites at the Osage Mine Complex. The work included development of construction plans, specifications and cost estimates. The project consisted of the installation of eight bat gates and six wet mine seals.

Other significant design features include:

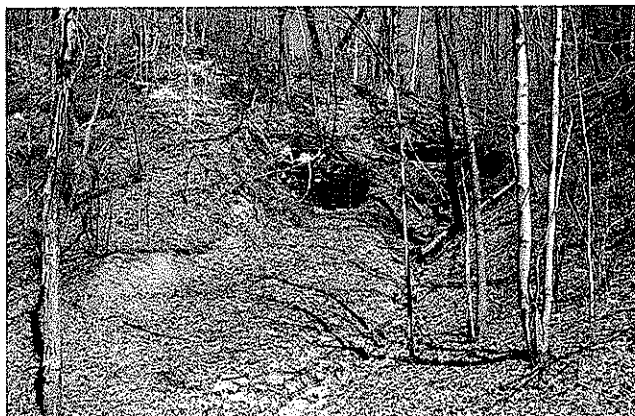
- A temporary stream crossing
- Stream bank protection
- Access road restoration
- Removal of existing buildings and foundations
- Slope remediation
- Rip Rap lined ditches
- Grading
- Erosion and Sediment Controls



Wet mine seal with rip rap channel



Bat Gate with rip rap channel



Bat Gate with rip rap channel



Culverts with rip rap channels



## ALBRIGHT PASSIVE TREATMENT SYSTEM

Client: Allegheny Power Service Corporation  
Location: Preston County, West Virginia  
Cost: \$350,000

The Albright system is an early application of wetlands to treat leachate from an inactive disposal facility. The project was initiated as a research and development project to evaluate the application of passive technologies to these wastewaters. Gannett Fleming has been responsible for the development, design, installation, maintenance, and annual evaluation of the project since its inception in 1988. The facility receives water of a highly variable nature, with iron of 12 to 70 mg/l, manganese of 11 to 14 mg/l, and flows of 8 to 140 gpm. The original system consisted of four vegetated aerobic basins, and favorable results led to the addition of two lateral flow organic basins in 1992. The system has been remarkably reliable in meeting iron compliance, achieving concentration reductions of over 98%. Manganese reductions were brought into compliance (<1.0 mg/l) with the addition of manganese oxidizing beds in 1996.

- Developed passive wetland treatment system
- Prepared annual reports
- Evaluated metals removal rates within the system
- Identified long-term trends in treatment performance
- Predicted future maintenance requirements
- Supplied detailed analysis of construction and future operation costs in comparison to conceptual chemical treatment alternatives

### Special Features

- Totally passive gravity system
- 10-year comprehensive performance monitoring program
- Continual compliance with Fe and Mn effluent criteria
- \$1.26 Million in 10 year savings over chemical alternative

### Services Provided

- Design, construction, and construction supervision
- Interpreted long-term monitoring data







**Gannett Fleming**

King Coal Highway

Client: Alpha Natural Resources

Location: Mingo County, West Virginia

Design Fee: \$17,300

Gannett Fleming was responsible for geologic reconnaissance, geotechnical site investigation program, site mining issues, cut slope analysis and design, very large embankment fills analysis and design, and other geotechnical design and analysis for the King Coal Highway Project. The proposed highway is a 96-mile, four-lane divided highway running from Williamson to Bluefield. This section of the highway is 9.0 miles in length and is located between Red Jacket and Hampden. The project also consists of the proposed relocation of the existing two-lane roadway of WV Route 65 that runs between Taylorville and Red Jacket accommodating an at grade intersection with the proposed King Coal Highway. These sections of roadway will be developed over an area of rugged topography with an extensive history of surface and deep mining activities. The King Coal Highway alignment encounters large areas with mine overburden mountaintop back stacks, mine valley fills, mine spoil fires, and extensive highwalls. An additional aspect of the project is the partnering relationship between Alpha Natural Resources Inc. (formerly Nicewonder Contracting Inc.), WVDOH, and Mingo County, so that the road can be constructed concurrent with mining activities.





## NORTH SPRING BRANCH BASEFLOW ISOLATION AND PASSIVE TREATMENT SYSTEM

Client: Georgia-Pacific Corporation  
Location: Wyoming County, West Virginia  
Construction Cost: \$97,000

Gannett Fleming prepared the design, plans, specifications, and bid package materials and provided construction supervision for this project. Under National Pollutant Discharge Elimination System (NPDES) permit conditions, treatment was required for metals-contaminated baseflow emanating from the toe of a wood-waste landfill and entering a mountain stream channel at multiple, diffuse points.

Our firm used a baseflow isolation approach and designed a system to separate the contaminated groundwater from clean surface water runoff in the channel. The design involved filling the existing channel with coarse aggregate and a collection pipe, and a new, lined-stream channel was reconstructed on top of the collection zone using gabion baskets. Discharge from the collection zone was monitored for wetland treatment system design data under an extension of the NPDES compliance time frame negotiated by our firm.

The final design consisted of three vegetated wetland cells focused on iron removal and a unique high-angle bacteria bed targeted at manganese removal with minimal construction space.

The system has shown excellent performance and has met compliance targets since its construction.

### Services Provided

- Water quality sampling and field investigations
- Permitting and regulatory negotiations
- Surface and groundwater hydrologic modeling
- Engineering design plans and specifications
- Bid package preparation
- Detailed cost analysis

### Special Features

- Stream baseflow isolation to minimize water treatment volumes
- Stream channel reconstruction
- Constrained-space construction approaches
- Sloped bacteria bed system





## FARR TIPPLE ACID MINE DRAINAGE TREATMENT SYSTEM

Client: Ohio Department of Natural Resources, Division of Mineral Resources Management  
Location: Tuscarawas County, Ohio  
Construction Cost: \$128,000

Gannett Fleming designed the Farr Tipple acid mine drainage (AMD) treatment system to provide passive treatment to an underground mine discharge. Influent waters were characterized by elevated levels of metals and acidity.

Our firm's design proposed a mine seal to collect and direct the mine water to enter the treatment system. The water passes through an anoxic limestone drain, then flows through a series of three wetland cells—an aerobic pond cell, an aerobic wetland cell, and a rock filter cell.

The anoxic limestone drain increases the alkalinity, promoting iron precipitation in the aerobic pond cell. The remaining two cells continue the iron removal, producing an acceptable effluent quality.

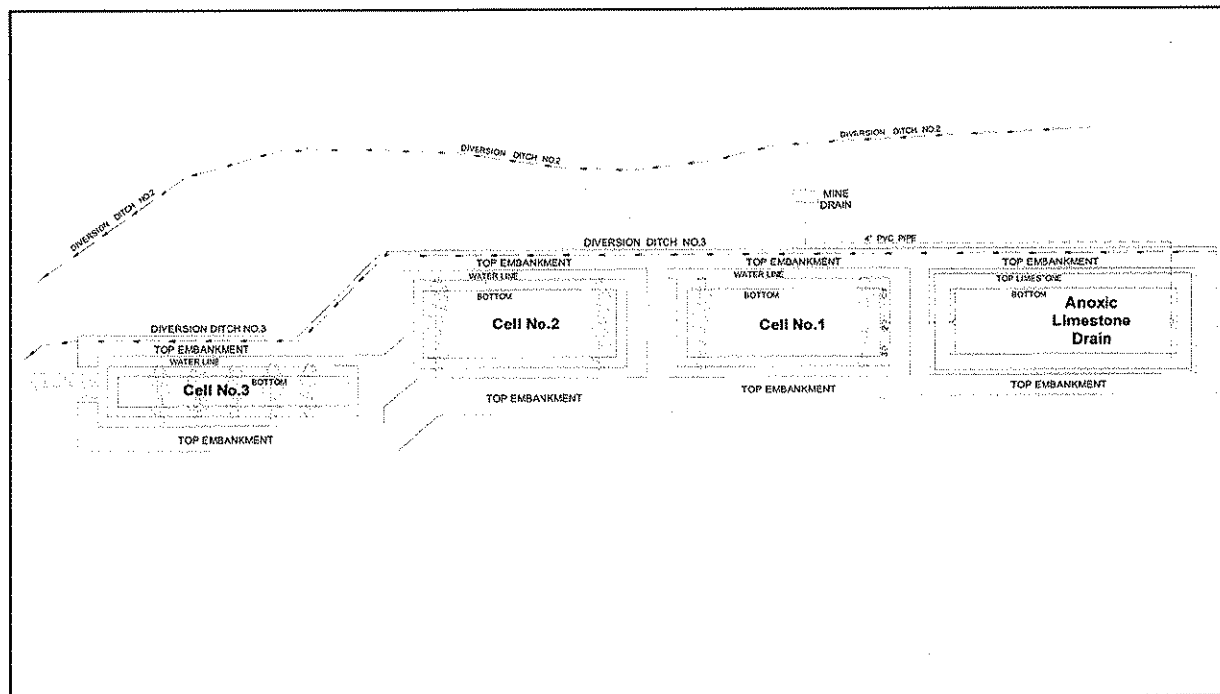
The final effluent from the treatment system was within normal effluent limits. Our firm designed the system with a life expectancy of a minimum of 15 years.

### Services Provided

- Design and construction supervision
- Regulatory coordination
- Performance analysis

### Special Features

- Gravity flow system
- Passive pre-treatment to reduce chemical usage
- Minimal-maintenance design





## SIMMONS RUN ACID MINE DRAINAGE TREATMENT SYSTEM

Client: Ohio Department of Natural Resources

Location: Coshocton County, Ohio

Construction Cost: \$253,000

Gannett Fleming designed the Simmons Run acid mine drainage (AMD) treatment system to collect and passively treat acid mine drainage originating from abandoned underground and surface coal mines. Influent waters are characterized by elevated levels of metals and acidity.

Our firm's design consists of an open water pond and five wetland cells, three anaerobic vertical flow wetland cells, and two aerobic wetland cells. The open water pond will collect surface runoff in addition to mine drainage seepage, and it will function as a flow equalization device. The pond has been designed with an emergency spillway to route high flows around the wetland system to avoid damage to the wetland cells. The underground mine discharge enters the system at

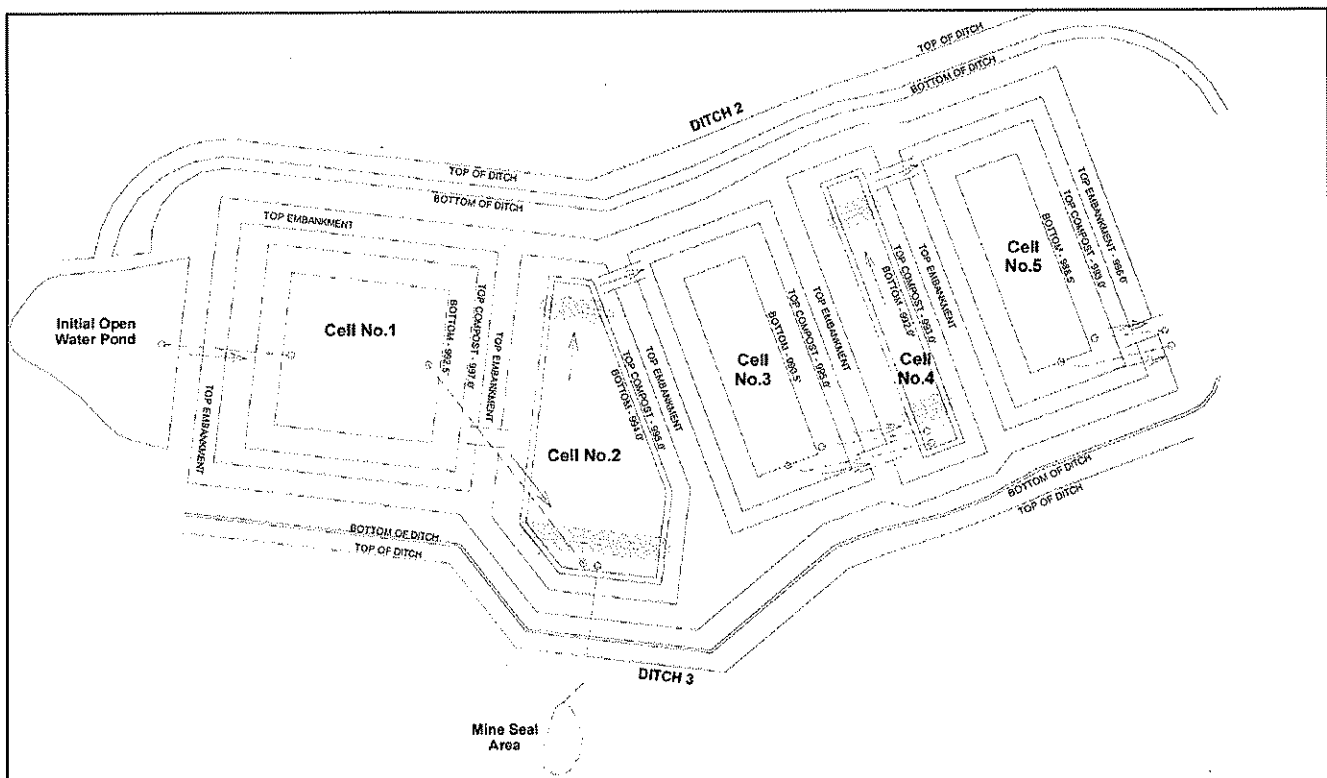
the second wetland cell. Discharge from the system is anticipated to be well within mandated effluent limits. Design of the wetland cells has been based on a minimum life expectancy of 15 years.

### Services Provided

- Design and construction supervision
- Regulatory coordination
- Performance analysis

### Special Features

- Gravity flow system
- Passive pre-treatment to reduce chemical usage
- Flow bypass for system protection





## KETTLE CREEK WATERSHED – SURFACE RECLAMATION AND BIOCAPPING

Client: Trout Unlimited  
Location: Leidy and Noyes Townships, Clinton  
County, Pennsylvania

Gannett Fleming prepared a reclamation and biocapping plan for an abandoned surface coal mine. The work included preparing an erosion-and-sedimentation plan, a National Pollutant Discharge Elimination System permit, a manufactured-soil material handling and composting plan, a revegetation plan, and a bid package. Our firm also provided construction observation services and developed as-built plans.

A reclamation plan was then developed for the 57-acre site, which included biocapping using WesTan Soil Plus, an organic soil conditioner. Specific goals and objectives for the project included reducing the hydraulic and metal loadings entering Two Mile Run and Kettle Creek and creating a wildlife food plot for Pennsylvania's growing elk herds. The food plot was created by regrading and establishing a permanent vegetative cover on the impacted area. Our firm maintained close coordination with the client during plan preparation in order to best meet the restoration goals.





## DENTS RUN SITE 3893 ACID MINE DRAINAGE TREATMENT SYSTEM RETROFIT

Client: U.S. Army Corps of Engineers,  
Baltimore District  
Location: Benazette Township, Elk County,  
Pennsylvania  
Construction Cost: \$50,000

Gannett Fleming finalized designs for the reclamation of an abandoned surface coal mine, Dents Run Site 3893, and the passive treatment systems for seeps 8 and 9 acid mine drainage (AMD) discharges. Site 3893 AMD restoration project consists of two unnamed tributaries impacted by AMD baseflow.

The U.S. Army Corps of Engineers' water quality monitoring report in 2006 of the seep 9 hollow found the water quality had worsened since the 1999 feasibility study. These findings resulted in an unacceptably short maintenance interval for the system as designed.

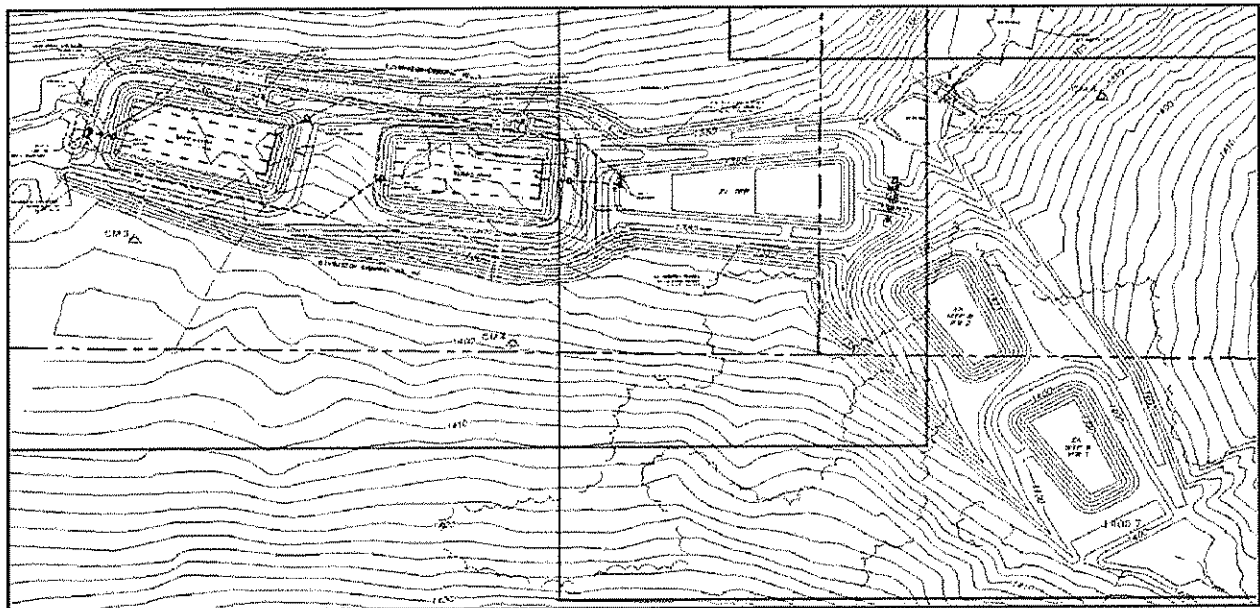
Our firm analyzed possibilities for remediation and retrofit and focused on using as much of the existing design as possible. Our recommended alternative was a recirculating pretreatment for the seep 9 discharge, to lower total influent acidity and dissolved metals concentrations. This significantly extended system life and decreased operations and maintenance costs, with a minimal up-front cost.

### Services Provided

- Performed feasibility analysis to identify possible remedial alternatives
- Designed a retrofit pretreatment treatment system to handle increased AMD pollution loading
- Prepared plan drawings and specifications for construction
- Revised National Pollutant Discharge Elimination System permit packages to receive approval from the Pennsylvania Department of Environmental Protection

### Special Features

- Innovative use of centuries old hydraulic ram water technology
- Significant cost savings possible over non-recirculating treatment schemes
- New opportunities for AMD discharges previously thought untreatable by passive technologies





## DENTS RUN SITE 3888 ACID MINE DRAINAGE MITIGATION DESIGN AND CONSTRUCTION SERVICES

Gannett Fleming prepared the passive treatment plan final design and construction documents for Dents Run Site 3888. Dents Run Site 3888 is an acid mine drainage (AMD) restoration project consisting of three abandoned deep mine discharges draining directly to a high quality cold-water fishery. The U.S. Army Corps of Engineers (USACE), Baltimore District, prepared a conceptual passive treatment plan for these discharges as part of a project report and integrated environmental impact statement (EIS) for the overall Dents Run ecosystem restoration project.

Based upon the EIS concept plan, open limestone channels (OLCs) were used to remove acidity, with an oxidation precipitation basin (OPB) placed below two of the AMD sources to remove metals. One OLC treated the combined discharge from two seeps, and the other OLC collected and treated a third seep.

The need for future modifications to the passive treatment system was analyzed to determine if additional alkalinity was necessary. The OPB was designed to allow conversion to a vertical flow wetland (VFW), if necessary. Subsequent water quality monitoring indicated the conversion was required to neutralize seeps 2A and 2B, and the OPB was retrofitted to a VFW.

Client: U.S. Army Corps of Engineers,  
Baltimore District  
Location: Benazette Township, Elk County,  
Pennsylvania  
Construction Cost: \$350,000

### Services Provided

- Performed water sampling and a water data analysis on three sampling points
- Predicted chemical loadings and system performance 95th percentile flow
- Summarized treatment methods and effectiveness
- Proposed a retrofit VFW for the OPB
- Developed construction plan drawings and specifications for project design
- Prepared a National Pollutant Discharge Elimination System permit application to receive approval from the Pennsylvania Department of Environmental Protection

### Special Features

- Designed an expandable system for easy installation of future components
- Detailed post-construction monitoring program
- Detailed maintenance plan for system
- Developed conceptual future system additions





## FAIRMOUNT CITY ABANDONED MINE LAND/ ACID MINE DRAINAGE PROJECT

Gannett Fleming provided a preliminary investigation, preliminary design, final design, and construction oversight for the reclamation of abandoned mine lands and for acid mine drainage (AMD) abatement. The project involved developing conceptual treatment plans for the mitigation of AMD from three abandoned mine seals; designing a conceptual reclamation plan for an abandoned coal-processing facility, including the demolition of existing structures; and relocating a utility line.

Our firm performed field investigations, made assessments of the quality and quantity of AMD discharges at two sites, and made an assessment of an underground mine pool and its impact to Redbank Creek. The assessment included a property ownership evaluation; Pennsylvania Department of Transportation permit requirements; railway easement licensing; utilities mapping; geologic and mining history investigations, including drilling and records searches at the Pennsylvania Department of Environmental Protection district mine offices; geotechnical investigations

Client: Pennsylvania Department of  
Environmental Protection, Bureau of  
Abandoned Mine Reclamation  
Location: Clarion County, Pennsylvania  
Firm's Fee: \$139,000

for conceptual AMD treatment mitigation plans; water quality and quantity investigations of the mine discharges, mine pool, and streams; and conceptual reclamation plans and preliminary engineer's cost estimates for the abandoned mine land reclamation and AMD treatment systems.

### Special Features

- Mine pool investigations
- Private property and municipal meetings
- AMD assessment and statistical analyses

### Services Provided

- Development of mine history
- Geotechnical investigation
- Surface-water and groundwater monitoring
- AMD mitigation plans
- Agency coordination
- New Shawmut Railway easement licensing
- Engineering cost estimates
- Passive AMD treatment system design





## FALL BROOK ACTIVE TREATMENT SYSTEM

Client: Tioga County Concerned Citizens  
Committee

Location: Fall Brook, Tioga County, Pennsylvania

Construction Cost: \$1.2 Million

Gannett Fleming designed an active treatment system that would collect, convey, and treat the discharges of four abandoned deep mines; these discharges are impacting Fall Brook, a tributary of the Tioga River. Preliminary designs called for passive treatment of the discharges, but site constraints and the large size and cost of passive treatment made the largest of the discharges untreatable with this technology.

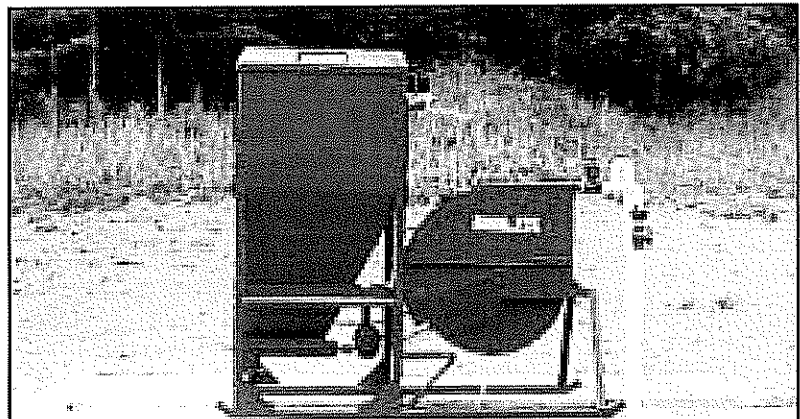
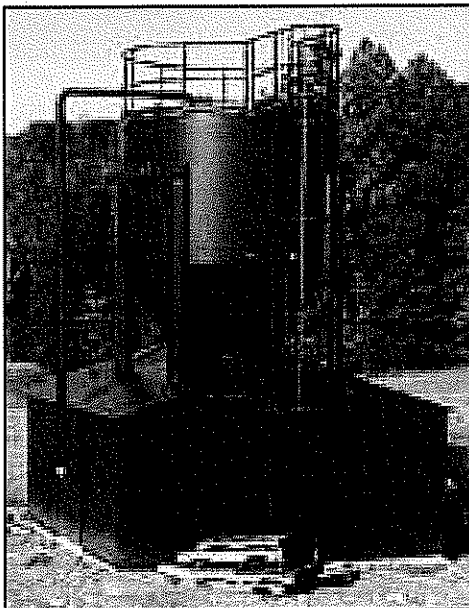
Our firm analyzed the available water quality and flow data at the site. We performed a preliminary feasibility study to determine if it was possible and economically feasible to collect and convey the discharges to a central location without using pump stations to lift the flow of acid mine drainage (AMD). After completing initial surveying, we determined that a non-powered conveyance system could be designed to carry the flow to a location that best suited a treatment plant. The system was designed to treat a 3,000 gallon per minute combined discharge; it consists of approximately 6,000 linear feet of conveyance pipelines, a pebble lime active treatment module with silo, mixing channels, and oxidation and precipitation basins.

### Services Provided

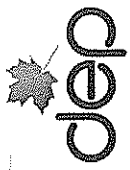
- Performed feasibility analysis to determine effectiveness of active treatment over passive
- Performed site survey and topographic mapping
- Designed a collection and conveyance system to gather four separate discharges
- Prepared detailed engineer's cost estimate
- Prepared plan drawings and specifications for construction

### Special Features

- Non-powered conveyance system
- Active system provided a lower total cost than passive
- Meets effluent goals
- Provided excess alkalinity to remediate AMD from upstream sources
- Innovative use of existing technology



*Images used with permission from Aquafix Systems, Inc.*



West Virginia Department of Environmental Protection

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*Section 6 – Purchasing Affidavit*



STATE OF WEST VIRGINIA  
Purchasing Division

**PURCHASING AFFIDAVIT**

West Virginia Code §5A-3-10a states: 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.

**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.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "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 exceeds five percent of the total contract amount.

**EXCEPTION:** The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this 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.

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.

**WITNESS THE FOLLOWING SIGNATURE**

Vendor's Name: Gannett Fleming, Inc.

Authorized Signature: *[Signature]* Date: 4-26-10

State of West Virginia

County of Monongalia, to-wit:

Taken, subscribed, and sworn to before me this 26<sup>th</sup> day of April, 2010.

My Commission expires August 28, 2013.

AFFIX SEAL HERE

NOTARY PUBLIC

*[Signature: Kristi S. Roby]*

