N O T I C E

Due to a mechanical error in one of the Purchasing Division's official time clocks on Tuesday, March 20 to Thursday, March 22, 2012, the stamp noted on some bids may have the correct day and time; however, the month that is noted is "February," but should have read "March."

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

5088 West Washington Street
Charleston, West Virginia 25313

(304) 769-0821 Phone
(304) 769-0822 Fax

March 22, 2012

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street, East
Charleston, WV 25305-0103

Attention: Mr. Guy L. Nisbet, Buyer Supervisor

Re: Expression of Interest for Professional Engineering Design Services and Construction Monitoring Services for the East Lynn II Design Project Wayne County, West Virginia RFQ Number DEP15585

Dear Mr. Nisbet:

Michael Baker Jr., Inc. (Baker) is pleased to submit this Expression of Interest to provide professional design engineering services for the above-mentioned project. To meet your design requirements, Baker has assembled a team of experienced personnel who have performed on previous similar assignments for the West Virginia Department of Environmental Protection (WVDEP). Our proposed design team members have also provided engineering services for numerous abandoned mine land reclamation and related projects over the years for a variety of clients as reflected in the attached documents.

We have illustrated our ability to deal with multiple projects without a reduction to the level of quality and service to the Department. Exploratory drilling services and soil/rock analysis, if required, will be provided by NGE Consultants, which has a successful history as a sub-consultant for Baker and the WVDEP.

Baker's staff is experienced in all aspects of AML/AMD projects. Baker has been providing engineering services for abandoned mine lands since the Federal government first enacted AML legislation. We have provided these services for the West Virginia Department of Environmental Protection, the Pennsylvania Department of Environmental Protection, Ohio Department of Natural Resources, and the U.S. Office of Surface Mining to name a few. Our on-going experience since 1983 with WVDEP gives us the confidence to assure you our assignments will be completed on time and within established budgets.

This submittal illustrates our qualifications and experience to deal with this assignment of work arising from this contract. If you have any questions or require additional information concerning our qualifications, experience or approach, please contact me at 304.769.0821.

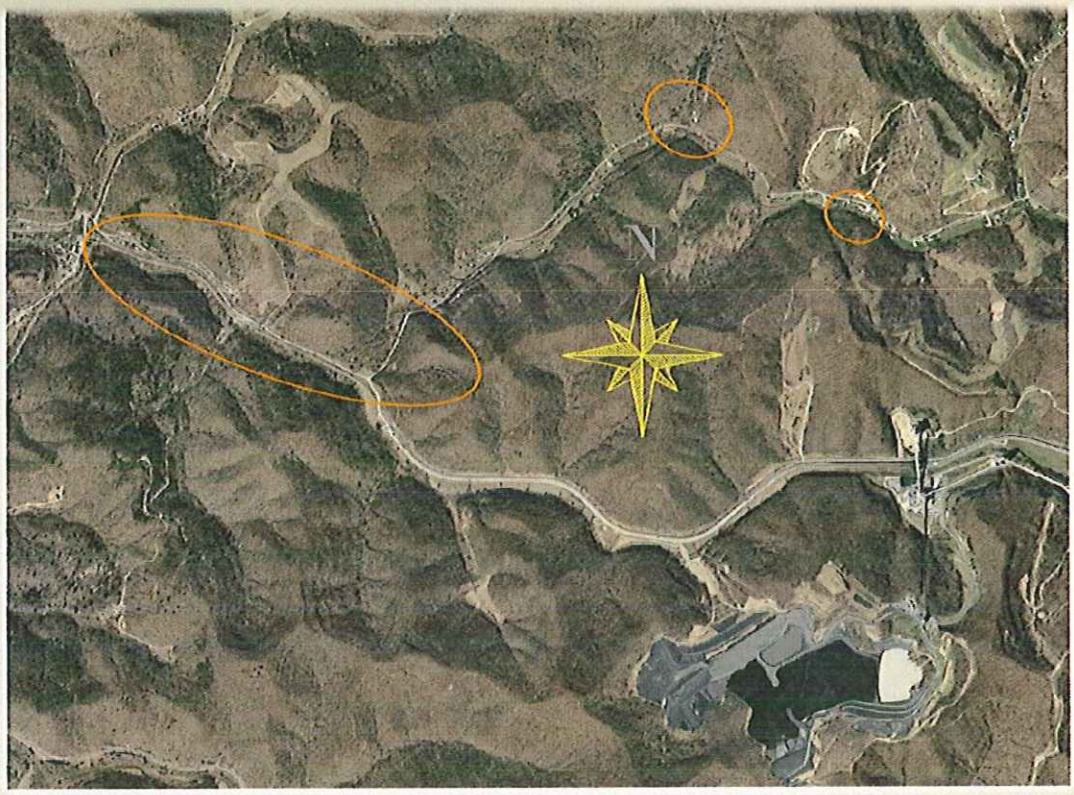
Sincerely,

MICHAEL BAKER JR., INC.

Patrick W. Fogarty, P.E., P.S.

Expression of Interest
Professional Engineering Design Services and Construction Monitoring Services
for
East Lynn II Design
Wayne County, West Virginia

RFQ Number DEP15585



Submitted to:
State of West Virginia
Department of Administration
Purchasing Division
Charleston, West Virginia

dep
west virginia department of environmental protection

Submitted by:
Michael Baker Jr., Inc.
Charleston, West Virginia

March 22, 2012

Baker

Project Understanding

We have carefully reviewed the EOI and performed a thorough site reconnaissance on March 19, 2012. Based on the EOI, Project Description and our site evaluation, we understand that this project has multiple sites and the following key design/construction elements:

- Sediment and Erosion Control Measures
- Clearing and Grubbing
- Subsurface Investigation
- Mine Water Level Testing
- Soil and Water Analysis
- Drainage Channels and Underdrain Design
- Remove Miscellaneous Debris Throughout Sites

- Overall View of Site 1

dep
west virginia department of environmental protection

Baker
Michael Baker Jr., Inc.
5088 West Washington Street
Charleston, WV 25313
304-769-0821

➢ Properly Seal Portal at Site 1

➢ Drainage From Portals – Site 1

➢ Properly Seal Collapsed Draining Portal - Site 2

➢ Properly Seal Draining Portal - Site 2

➢ Properly Convey Drainage from Portal – Site 2

➢ Reclaim Unvegetated Refuse Areas – Site 2

➢ Reclaim Unvegetated Refuse Areas – Site 3

➢ Incised Stream Flowing Through Refuse– Site 3

➢ Properly Seal Open Portal – Site 3

➢ Remove Block Structures – Site 3

➢ Overall View of Site 4

➢ Properly Seal Portals – Site 4

ATTACHMENT "B"

AML CONSULTANT CONFIDENTIAL QUALIFICATION QUESTIONNAIRE

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
AML CONSULTANT CONFIDENTIAL QUALIFICATION QUESTIONNAIRE

Attachment "B"

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
East Lynn II Design Wayne County, West Virginia (DEP15585)	March 22, 2012	25-1228638

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
Michael Baker Jr., Inc.	4301 Dutch Ridge Road Beaver, Pennsylvania 15009	

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)
304-769-0821	1940	Individual, **Corporation**, Partnership, Joint-Venture	YES NO

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

Michael Baker Jr., Inc./ 5088 West Washington Street, Charleston, WV 25313/ 304.769.2154 / Russell E. Hall / 7 (Chas. WV), William D. Trimbath / 22 (Beaver, PA)

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS
Russell E. Hall, Assistant Vice President (304) 769-0821	William D. Trimbath, Vice President 724.495.4302

9. PERSONNEL BY DISCIPLINE (Bold Lettering Indicates Minimum Design Team Members)

243 ADMINISTRATIVE	2 ECOLOGISTS	1 LANDSCAPE ARCHITECTS	35 STRUCTURAL ENGINEERS
11 ARCHITECTS	1 ECONOMISTS	9 MECHANICAL ENGINEERS	21 **SURVEYORS/Technicians**
3 **BIOLOGISTS**	2 ELECTRICAL ENGINEERS	2 **MINING ENGINEERS**	5 TRAFFIC ENGINEERS
67 **CADD OPERATORS**	29 ENVIRONMENTALISTS	1 PHOTOGRAMMETRISTS	82 OTHER
1 CHEMICAL ENGINEERS	0 ESTIMATORS	10 PLANNERS: URBAN/REGIONAL	29 (Project Managers)
39 **CIVIL ENGINEERS**	23 **GEOLOGISTS**	5 SANITARY ENGINEERS	
47 CONSTRUCTION INSPECTORS / Mgrs.	2 HISTORIANS	9 SOILS ENGINEERS	
67 DESIGNERS	13 HYDROLOGISTS	6 SPECIFICATION WRITERS	765 TOTAL PERSONNEL (Pittsburgh Area Offices)
0 DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 13

*** RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.**

10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? _YES _NO N/A

12. RELEVANT EXPERIENCE. Include number of projects per each discipline

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

YES Description and Number of Projects:

Baker has been assisting state and federal agencies with abandoned mine land (AML) restoration and acid mine drainage (AMD) remediation since 1977. Baker's experience began with Operation Scarlift and now includes well over 200 AML/AMD remediation projects ranging from subsidence control, mine sealing, reclamation of mine refuse piles, strip pit and high wall; drainage improvements, revegetation, stream relocation, restoration of streams and wetlands, landslide correction, and replacement of water supplies affected by abandoned mine lands to abatement of AMD problems. Baker has been assisting West Virginia Department of Environmental Protection with Abandoned Mine Lands Remediation/Mine Reclamation Engineering design services ever since WVDEP initiated its AML Reclamation Program in 1983. In addition to WVDEP, our also currently assisting PADEP with AML reclamation and AMD remediation designs. The "AML and related Project Experience Matrix" table provided at the end of this CCQQ shows our experience on waterline extension and AML related projects for different state agencies and for private clients.

B. Is your firm experienced in Soil Analysis?

YES Description and Number of Projects:

In designing AML reclamation projects, generally three types of soil analysis are needed. These analyses may include: a) geotechnical analysis, b) soil analysis for revegetation potential (pH, Acid Base Accounting, Nutrients) and c) soil analysis for hazardous materials. Baker is involved in selecting and collecting the soil samples and analyzing the results of laboratory testing as required for design. Laboratory testing is performed by a subcontractor. Of the thirty (30) most recent AML projects, Baker was involved in soil analysis for 19 projects.

C. Is your firm experienced in hydrology and hydraulics?

YES Description and Number of Projects:

Baker's hydrology and hydraulic staff for AML/AMD remediation design are experts in the application of hydraulic models that include HEC-1, HEC-2, HEC-RAS, HY8, TR20, TR55, HAESTADS PONDS 2, FLOWMASTER, KYPIPE 2, CYBERNET, SEDCAD 4, UNET, and DAMBRK. Baker applies this experience to services such as stormwater management; culvert analysis; hydrologic and hydraulic studies; storm sewer design; floodplain modeling; channel design; watershed planning; energy dissipation; and waterline extension and distribution.

Expertise in hydrology and hydraulics is essential in any AML reclamation/AMD remediation design. Of the thirty (30) most recent AML projects, twenty six (26) projects needed hydrology/hydraulics expertise of the AML/AMD design group.

12. RELEVANT EXPERIENCE. Include number of projects per each discipline

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

YES Description and Number of Projects

Baker, to date, has designed eight (8) domestic waterlines for WVDEP and countless others for clients in West Virginia, Pennsylvania, Ohio, and elsewhere. In general, for each of these projects, Baker performed field surveying of proposed routes, subsurface investigation for storage tank site foundations, water distribution system hydraulic modeling and analyses, pipeline design, storage tank sizing, sizing and designing booster pumping station, and electric and telemetric system. For McDowell County Public Water Supply System, Baker also designed a water treatment and filtration plant. Construction plans, specifications, cost estimate and bid schedules were prepared for each project.

Prior to designing each of the waterlines, under separate work directives from WVDEP, Baker performed water resources studies for each project area to determine if the pre-law mining had impacted the aquifer of the area from which the area residents got their water supply. Water resource studies involved evaluation of mining activities in the project area with regard to date and time of mining, and the effect of mining on the local aquifers and groundwater quality based on hydrogeologic data, resident interview, water sampling and testing. To date Baker has performed more than twelve (12) water resources studies.

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

YES Description and Number of Projects:

Baker is well experienced in the evaluation of acid mine drainage and the design of AMD abatement measures. Design experience includes both active and passive treatment system. Evaluation and design of AMD abatement system is based on the characterization of the AMD site as well as the flows and chemistry of the AMD. AMD sampling for chemical parameters as well as the flow measurements covering high and low flow periods are most important in developing AMD abatement system. To date Baker has evaluated and designed fourteen (14) AMD abatement systems. Three of these fourteen projects – one for PADEP (Dumans AMD Treatment), an active system, and the other two for the ODNR (Lindentree AMD Remediation and Mineral Zoar Road AMD Abatement), passive treatment systems, have been recently constructed and are currently in service except the Mineral Zoar Road AMD project which is under construction.

Baker has designed seven (7) AMD remediation projects for WVDEP. AMD remediation measures designed included: Open Limestone Channel (OLC), Anaerobic and Aerobic Wetlands and settling ponds, Limestone Sand dumping in the stream, and Alkaline Leach Bed/Anoxic Limestone Drains. Other AMD abatement designs were made for Baltimore and Nashville Districts of the U.S. Army Corps of Engineers.

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:
Fogarty, Patrick, W., P.E., P.S. Senior Engineer	15	25	18

Brief Explanation of Responsibilities

Mr. Fogarty is an Engineer and Surveyor responsible for the development of all types of civil, structural, environmental and transportation projects throughout West Virginia and surrounding states. He has more than twenty years of engineering experience and over ten years of experience with the WVDEP on AML planning, mapping and design assignments. Various types of AML projects include landslide correction include retaining wall design, site grading and drainage improvements, acid mine drainage collection and neutralization, water line upgrade and extensions, and various projects requiring site regrading and drainage upgrade. Work on these projects also included establishing horizontal and vertical control surveys for aerial photogrammetry mapping, baseline layout, referencing control points, generating check cross sections and site surveys including all physical and topographic features of each unique site civil design, utility relocations, property transfer, treatment design, and project management. Specific WVDEP/AML projects for which Mr. Fogarty has been personally responsible as Project Manager and Lead Design Engineer include the following:

WVDEP14387, Harrison County. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at six (6) sites at the Crooked Run #5 Complex in Harrison County near Clarksburg.

WVDEP14176, Kanawha County. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at four sites (Marmet (Wells Drive), Cabin Creek (Stapler), East Bank (Garten), and the Mill Hollow Complex) in eastern Kanawha County.

Morris Creek Watershed Association AMD Treatment, Montgomery. Design of treatment systems for stream contamination due to pre-law mining activity within the Morris Creek Watershed near the City of Montgomery, West Virginia. Contamination sources were initially identified for four (4) particular areas within the watershed. Treatment systems were designed for each of the areas including: Stream Relocation and In-Stream Aeration (Upper Main Stem of Morris Creek), Anaerobic Wetland and Polishing Pond (Lower Main Stem of Morris Creek), Aerobic Wetland and Polishing Pond (Possum Hollow Branch of Morris Creek), and In-Stream Aeration (Black Snake Hollow of Morris Creek). The designs incorporated conventional and unconventional treatment processes for the removal of Iron, Manganese, Aluminum, and acidity. The assignment included the coordination of aerial photogrammetric mapping, geotechnical investigation, water sampling (for quality and flowrate) and the preparation of plans, specifications and individual property plats to include the treatment areas within the corporate boundary of the City of Montgomery.

Norton-Harding-Jimtown PSD Waterline Extensions, Randolph County. The assignment included the coordination of aerial photogrammetric mapping, geotechnical investigation, and the preparation of plans and specifications for planned extensions to three communities (Pumkintown, Mabie, and Green). The project consisted of approximately 30,000 feet of 6-inch and 8-inch PVC SDR 21 water pipe, one new 50 gpm booster pump station, one 100,000 gallon water storage tank, fire protection and other appurtenances.

Kilsyth (City of Mount Hope) Drainage Improvements, Fayette County. Drainage improvements to the intake site for the City of Mount Hope raw water pump station. The design of a circular reinforced concrete tank over a deep mine portal, the collection and rerouting of excess mine water and storm drainage. The design included phasing to assure continuous operation of the pump station during construction.

Chief Logan State Park AMD, Logan County. Wet mine seals and open limestone channel design for the treatment acid mine drainage at numerous locations within the State Park.

Additionally, Mr. Fogarty has specific training and expertise with Natural Stream Design having completed Levels I through IV of ***Rosgen*** Training through Wildland Hydrology Courses. Mr. Fogarty has also completed the Assessment and ***Sediment-Based Design of Stream Restorations Short Course*** through the University of Louisville, Stream Insittute

EDUCATION (Degree, Year, Specialization)
B.S., 1985, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
American Society of Civil Engineers
International Right of Way Association
American Planning Association

REGISTRATION (Type, Year, State)
Professional Engineer, 1990, WV; Professional Surveyor, 1993, WV
Professional Engineer, 1996, OH; Professional Surveyor, 1996, OH
Professional Engineer, 2000, KY; Professional Land Surveyor, 2001, KY

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:
Hynes, Gregory P., P.E. Project Manager/Senior Engineer	21	21	25

Brief Explanation of Responsibilities

Mr. Hynes is an engineer with a background in reclamation of abandoned mine lands, including acid mine drainage abatement, earthwork and grading plans preparation, hydrologic and hydraulic analysis, and erosion and sediment control structures. He also has extensive experience in the design of water distribution systems, hydraulic structures, and sanitary collection systems; and permitting of mining facilities. At Baker, he has worked on over thirty abandoned mine land reclamation projects which include reclamation of coal refuse piles, sealing of mine portals, grouting for mine subsidence, treatment of passive and active water, evaluation of pre-law mining impacts on drinking water supplies, and restoration of stream channels. Many of these projects have been for the West Virginia Department of Environmental Protection, Abandoned Mine Lands and Reclamation Office. He has also served as project engineer for over 30 water distribution projects located in Ohio, Pennsylvania, and West Virginia.

Wymer Portals and Refuse & Davidson Highwall, Monongalia County, WV. *West Virginia Department of Environmental Protection.* Project Manager/Senior Engineer. Arranged for mapping and drilling by subconsultants, oversaw assistant engineers, performed research of geological data and mining maps, review of water quality data, preparation of USACE and WVDOH permits for stream channel relocation and highway crossings. Prepared construction plans and specifications and attendance at pre-bid and preconstruction meetings for the project which included erosion and sedimentation control measures, site grading, mine seals, bat gates, reestablished and relocated stream channels, open limestone channels, collection and diversion ditches, backfilling a dangerous highwall, soil cover placement, and revegetation.

Chalk Mountain Mine and Dump Site 4, Spruce Pine, N.C. *The Feldspar Corporation.* Project Manager. Duties included site investigation and preparation of disposal and reclamation plans for a strip mine including E&S controls and ponds, surface water ditches, soil cover placement, and revegetation. The project included review of available site rock and soils data, design and preparation of construction plans, narratives, and specifications.

Miller Mountain Feasibility Study, Preston County, WV. West Virginia Department of Environmental Protection. Senior Engineer. Provided conceptual water system evaluation and distribution system extension requirements including design, cost estimate, and narrative as part of a feasibility report which assessed pre-law mining impacts to local groundwater and provided water supply alternatives including the extension of a nearby distribution system.

Kempton Refuse and AMD, Tucker County, WV. *West Virginia Department of Environmental Protection.* Senior Engineer. Performed research of geological data and mining maps, review of water quality data, and design of acid mine drainage abatement measures, including open limestone channels, a limestone pond, a Successive Alkalinity Producing System, and an aerobic wetland. Prepared construction plans and specifications and attendance at pre-bid and preconstruction meetings for the project which included erosion and sedimentation control measures, site grading, mine seals, rock underdrains, collection and diversion ditches, backfilling a dangerous highwall, soil cover placement, revegetation, and reforestation.

Fort Gordon Mine Closure Plans, Augusta, Georgia, US Army Corps of Engineers, New Orleans District. Task Manager Duties included site investigation and preparation of reclamation plans including E&S controls, surface water ditches, soil cover placement, backfilling of highwalls, and revegetation as required for permanent closure of seven mining sites at Fort Gordon, Georgia. The project included review of available site water, rock, and soils data, design and preparation of construction plans, narratives, and specifications.

Borgman Portals and Refuse, Preston County, WV. *West Virginia Department of Environmental Protection.* Senior Engineer. Duties included research of geological data and mining maps, review of water quality data, and initial design of acid mine drainage abatement measures including open limestone channels, limestone ponds, and aerobic wetlands. Final design was provided without wetlands and ponds per request of the client. Prepared construction plans and specifications and attendance at pre-bid and preconstruction meetings for the project, which included site grading, mine seals, collection and diversion ditches, soil cover placement, and revegetation.

Powell River Ecosystem Restoration Project, Virginia. *U.S. Army Corps of Engineers, Nashville District.* Senior Engineer. Performed research of geological data and mining maps, review of water quality data, and design of acid mine drainage abatement measures, including aerobic wetlands, successive alkalinity producing systems, metals settling ponds, open limestone channels, and fly ash soil amendments. Prepared plans, specifications, and detailed cost estimates for the project, which included site grading, mine seals, collection and diversion ditches, soil cover, and revegetation.

EDUCATION (Degree, Year, Specialization)

M.S., 1997, Civil Engineering; B.E., 1987, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Professional Engineer, 1998, WV; Professional Engineer, 1993, PA Professional Engineer, 1998, OH; Professional Engineer, 2001, VA

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:
Dooley, Michael J. Mapping Supervisor	–	–	–

Brief Explanation of Responsibilities

Mr. Dooley has successfully managed at least 500 projects in a project manager or production manager role over the past 12 years. Projects ranged from large multi-million dollar nationwide mapping in the Caribbean utilizing various subcontractors, softwares and technologies to produce planimetry/topology and orthophotography to large-scale site mapping to provide high accuracy terrain data, planimetric data and pixel resolutions required for engineering specific projects.

He is well-versed through either having worked directly in or acquired specific technical knowledge of: flight planning, control planning, airborne GPS/IMU operations, aerotriangulation (automated and manual), LiDAR operations, film based and digital cameras, DTM and DEM compilation, GIS Mapping, transmission line and pipeline profiling, volumetrics for volume reporting, orthophotography and image rectification, vector based CAD editing, quality control, preparation of responses to RFP/LOI/RFQ, estimating.

He has served diversified customer contacts including multiple state and county governments, quasi-governmental organizations (E911, Councils of Government), city governments, public utilities, private utilities, mining and materials, appraisal districts. Engineering companies in support of oil and gas facilities and pipelines, electrical facilities and transmission. Engineering companies in support of residential, commercial and industrial development. FAA Commercial, International and General Aviation airports.

Experience

Production Manager
Tri-County Aerial Acquisition Project in conjunction with Frederick County, Maryland- 4 County Project – Frederick, Washington, Allegany, and Garrett Counties
Utilized LiDAR data and addition of DEM breaklines, produced 6" orthoimagery tiles, 1"=100'planimetric data including; building footprints, edge of pavement, stream channels, forested areas, driveways, parking, medians, ponds, fences & railroad tracks and 2' contours for Allegany County Government (allconet).

Project Manager
Bexar Metro 911 Network District, San Antonio, Texas - 3 County Project – Bexar, Comal, and Guadalupe Counties
Utilized digitally captured aerial photography, produce 6" pixel black and white orthoimagery, black and white was requested specifically by client. Generated DTM data which was yearly updated over three years. Digitized all roadway (public and private) centerline data, with yearly updates.

Project Manager
Dominican Republic, Countrywide mapping – "Irrigated Areas Mapping project - Irrigation Systems Management Studies"
Flew entire country, provided 12,000 frames of imagery in both digital and hard copy form to The National Government". Produced 0.5m pixel CIR and color imagery for specific irrigated areas.
Produced 1m contours from DTM acquired data, 1"=200' planimetric data.

EDUCATION (Degree, Year, Specialization)	
Suffolk County Community College – Civil Technology 1983 – 1987	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	**REGISTRATION (Type, Year, State)**

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Zang, Scott D., P.E. Senior Engineer	15	15	-

Brief Explanation of Responsibilities

Mr. Zang is a geotechnical engineer experienced in site investigation and design. His professional experience encompasses reconnaissance, field testing, laboratory testing, project analysis and design, report preparation and construction inspection for roadways, railroads, earth dams, buildings, hazardous waste studies, industrial facilities, airports and coal mines. His design experience also includes abandoned mine land reclamation and innovative AMD abatement design.

Raw Water Pump Station & Transmission Main, Wellsville, Ohio. *Southern Columbiana County Regional Water District.* Assistant Technical Manager. Performed the geotechnical investigation and made design recommendations for construction of a 30 foot deep dry well receiving water from a new intake system placed in the Ohio River. The design included evaluation of buoyancy effects, temporary shoring for the dry well and the intake piping, and remediation of a soft clay layer that would be encountered at the base of the excavation for the dry well.

Coal Refuse Pile Remediation Design Analysis and Plans, West Virginia. *West Virginia Department of Environmental Protection.* Engineer. Performed design analysis and prepared construction plans, specifications and cost estimates for remediation of several abandoned coal refuse piles. Projects included regraded slope stability analysis, retention structure design, subsurface water control and facilities design for surface water control of burning and non-burning refuse piles.

Coal Mine Subsidence Remediation Construction Plans, West Virginia. *West Virginia Department of Environmental Protection.* Engineer. Prepared construction plans, specifications and cost estimates for remediation of areas affected by subsidence of abandoned underground coal mines.

Private Residence Subsidence Evaluations, Western Pennsylvania. U.S. *Department of the Interior, Office of Surface Mining.* Assistant Engineer. Performed subsurface investigations to evaluate subsidence and subsidence-related incidents at several private residences. Project included surface distress cause determination and recommendation of remedial measures.

Manor Mine and Preparation Plant, Greene County, Pennsylvania. *Consolidation Coal Company.* Assistant Engineer. Conducted field testing program for foundations of several support buildings, a preparation plant, and coal storage silos.

Landini Mine Fire Remediation, Elizabeth, Pennsylvania. *U.S. Department of the Interior, Office of Surface Mining.* Assistant Engineer. Performed subsurface investigations and designed remedial measures to control a fire in an abandoned underground coal mine.

Acid Mine Drainage Abatement Project, Barton, Ohio. *Ohio Department of Natural Resources.* Engineer. Conducted water sampling program and field investigation during development of acid mine drainage abatement procedures at an abandoned underground coal mine and coal refuse area. Handled administration and office engineering during implementation of remedial measures.

Groundwater Monitoring Well Construction and Sampling, Pennsylvania and West Virginia. *Various Clients.* Assistant Engineer. Assisted with sampling and constructing groundwater monitoring wells at various locations.

EDUCATION (Degree, Year, Specialization)
BS, 1980, Geological Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers	Professional Engineer, 1985, PA

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Culler, James A., P.E., P.L.S. Engineering Manager	5	6	36

Brief Explanation of Responsibilities

Mr. Culler is a civil and environmental engineer with more than 25 years of experience in project planning, design, construction, operation and maintenance engineering services. His background includes municipal engineering representation, site engineering for industrial and commercial parks; municipal infrastructure design (roads, storm drainage, water and sewer); industrial and recreational facilities; wastewater and water planning and feasibility studies; and municipal and sanitary engineering designs (water and wastewater treatment, pumping, water storage and distribution, and wastewater collection and conveyance). He is also experienced in preparation of construction drawings and contract specifications; construction cost estimating; preparation of regulatory applications and supporting data; financial planning studies; user rate studies; and construction inspection services.

Water System Design Engineering, Aliquippa, Midland and Beaver Falls, Pennsylvania. *Various Pennsylvania Municipalities.* Project Engineer and Project Manager. Provided design engineering and construction services for water system extension projects.

Water Storage Tank Design Engineering, Beaver Falls, Aliquippa and Midland, Pennsylvania. *Various Pennsylvania Municipalities.* Project Engineer and Project Manager. Provided design engineering and construction services for new construction of finished water storage tanks.

Water System Hydraulic Analysis and Modeling, Beaver Falls, New Sewickley, Meadville, Baden and Koppel, Pennsylvania. *Various Pennsylvania Municipalities.* Technical Review Manager. Performed hydraulic analysis and modeling of various water distribution systems.

Spring Alley and Mercer Road Water Pumping Stations, New Brighton Borough and Daugherty Township, Pennsylvania. *Beaver Falls Municipal Authority.* Project Manager. Performed design engineering evaluations, permitting and preparation of equipment purchasing bidding documents for the two (2) water pumping stations. Spring Alley Station consists of two 455 gallons per minute at 305 feet TDH pumps upgradable to 575 gallons per minute at 330 feet TDH. Mercer Road Station consists of three pumps with two at 300 gallons per minute at 128 feet TDH and one at 400 gallons per minute at 147 feet TDH upgradable to two at 350 gallons per minute at 135 feet TDH and one at 500 gallons per minute at 165 feet TDH.

Water Treatment Plant Design, Berwind, West Virginia. *West Virginia Division of Environmental Protection.* Technical Review Manager. Performed technical reviews for preparation of construction documents for 300 gallons per minute potable ground water treatment facility. Treatment scheme included well pumping, air stripping tower, pre and postchlorination, sedimentation, filtration and sludge dewatering lagoons.

EDUCATION (Degree, Year, Specialization)
M.S., Civil and Sanitary Engineering, 1973; B.S., Civil Engineering, 1971

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers American Water Works Association Chi Epsilon Civil Engineering Honorary Fraternity Pennsylvania Water Environment Association Water Environment Federation	Professional Engineer, PA, 1976 Professional Engineer, WV, 1976 Professional Land Surveyor, PA, 1981

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:
Martin, Mark R., PG Assistant Geologist I	11	9	–

Brief Explanation of Responsibilities

Mr. Martin is a geologist with experience in conducting and reporting results of geotechnical investigations including geologic research, site reconnaissance, preparing test drilling contracts, test boring inspection, and geotechnical laboratory testing.

North Fork of Yellow Creek AMD Abatement, Jefferson County, Ohio. *Nashville District, U.S. Army Corps of Engineers.* Project Geologist. Duties included: Coordinating with the drilling firm; locating borings; inspecting test borings, including logging soil from auger cuttings and standard penetration tests and logging rock core from NX or NQ coring to determine coal refuse thickness, overburden thickness over mine portals and delineating mine voids; installing standpipe piezometers in mine voids to monitor water levels; performing field permeability tests in boreholes; selecting samples for laboratory testing, including classifications, nutrient analysis, compaction testing, and permeability testing; preparing typed boring logs from field originals using LogDraft program; coordinating with the Project Manager during field activities.

Mine Drainage Subsurface Investigation, Clarksburg and Fairmont, West Virginia. *West Virginia Department of Energy.* Project Geologist. Conducted site reconnaissance, monitored test borings to identify mine voids and installed standpipe piezometers to evaluate presence of mine pools for mine drainage investigation.

Mine Subsidence Subsurface Investigation, MacArthur, West Virginia. *West Virginia Department of Environmental Protection.* Project Geologist. Logged soil and rock core to identify mine voids and produced final test boring records to produce mine stabilization program.

Abandoned Mine Lands Project, Cheat Lake, West Virginia. *West Virginia Department of Environmental Protection.* Project Geologist. Oversaw test drilling activities to determine amount and location of coal mine spoil/refuse, collected acid mine drainage samples for testing, installed piezometers and produced final test boring records.

Abandoned Mine Lands Project, Masontown, West Virginia. *West Virginia Department of Environmental Protection.* Project Geologist. Conducted a site reconnaissance at four areas within the project location. Oversaw test drilling activities (i.e., logging soil and rock core) to determine amount/extent of coal mine spoil/refuse within the four designated areas, collected water samples from acid mine drainage locations, and produced final test boring records.

Abandoned Mine Lands Project, Ely and Puckett Creeks, Virginia. *Virginia Department of Mines, Minerals and Energy.* Project Geologist. Conducted a site reconnaissance for four sites in southwestern Virginia. Oversaw test drilling activities including logging soil and rock core, conducted bore hole permeability tests, and conducted a survey of local residence for a Hazardous, Toxic, and Radiological Waste Investigation Report.

Waterline Feasibility/Extension Project, Berwind, West Virginia. *West Virginia Department of Environmental Protection.* Project Geologist. Conducted a site reconnaissance, logged soil and rock core along the proposed alignment, collected water samples, and produced final testing boring records.

EDUCATION (Degree, Year, Specialization)	
B.S., 1988, Geology	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State) Professional Geologist, 1995, PA

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
David K. Saylor, P.E. Geotechnical Project Manager	14	25	5

Brief Explanation of Responsibilities

Southern Expressway Construction, Pittsburgh International Airport: Onsite professional engineer for excavation and disposal of municipal wastes within the right-of-way of a major highway construction project. Excavated wastes were disposed in a permitted onsite landfill while contaminated industrial wastes were disposed offsite in a non-RCRA disposal facility. Drums encountered during excavation were overpacked and delivered to an offsite RCRA incinerator and disposal facility. Approximately 465,000 cubic yards of solid waste and 280,000 cubic yards of unclassified soils were excavated.

EPA Superfund Site, Summit Ohio: Investigator for field investigation, drilling, sampling, and well installation for an abandoned hazardous waste incinerator site listed as a priority EPA Superfund site. Fieldwork was performed to support RIFS work.

Abandoned Mine Land Reclamation Program, West Virginia: Engineer for abandoned mined land projects in West Virginia. The majority of these projects involved the reclamation of abandoned, unstable coal refuse embankments. Prepared investigation programs to evaluate engineering and vegetation properties of materials, analyzed data to develop stable final configurations, and prepared contract documents, including drawings, specifications and cost estimates. Supervised the monitoring of construction for these projects.

Office of Surface Mining Contractor: Performed investigations and designed mitigation methods for numerous structures damaged by deep mine subsidence in the Tri-State area as a contractor of Office of Surface Mining.

General Geotechnical Projects: Performed and directed numerous geotechnical foundation investigations to develop recommendations for the design of foundation systems for both individual commercial office buildings and major mall developments. Scoped and implemented investigation programs, logged materials encountered, prepared geologic sections, and developed laboratory testing programs. Analyzed results of investigation to develop opinions and on most appropriate foundation systems and parameters for system design.

General Coal Refuse Design Projects: Designed coal refuse slurry impoundments and refuse piles in West Virginia, Virginia, and Kentucky. Monitored investigation programs, including the drilling of borings and performance of in-place bedrock permeability packer testing. Services provided include stormwater runoff calculations, flood routing, embankment stability, permit application preparation, design drawings, and report development.

Grove City Factory Shops, Grove City Pennsylvania: Engineer of record for the design of a water supply, storage, treatment, and distribution system for a major retail center in Pennsylvania. The water distribution system was approximately 2.5 miles long and supplied water to residences and businesses along the route. The source of water was a new community groundwater well.

Grove City Factory Shops, Grove City Pennsylvania: Engineer of record for the design of an approximate 5 mile long sanitary sewer system to provide sewer for a major retail center in western Pennsylvania. The system was designed as a gravity flow system and required two pump stations to overcome hilly terrain. The system was designed as a gravity system to permit residences along the route to tap in and eliminate their on lot systems.

AEG Building, Southpointe Business Park, Canonsburg, Pennsylvania: Developed investigation plan and designed and implemented repair for a landslide at a major industrial facility in Southwestern Pennsylvania. The toe of the embankment was immediately adjacent to a public roadway and public utilities.

Allegheny Power Company, Hatfield Power Station, Greene County, Pennsylvania: Project manager for the redesign, repermitting, and construction of an approximate 30-acre dry coal combustion byproduct disposal area designed in accordance with revised Pennsylvania Residual Waste Regulations. Mr. Saylor served as Engineer-of-Record for both the design and construction of the facility.

EDUCATION (Degree, Year, Specialization)
B.S., 1981, Civil Engineering; A.S., 1975, Business Administration

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers	Professional Engineer, PA, 1988; Professional Engineer, OH, 1995

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:
Smithson, Jason, T., P.S. Project Manager/Senior Eng. Technician	11	8	2

Brief Explanation of Responsibilities

Since joining the company in 2006, Mr. Smithson has been assigned to the Civil Services Department and is currently a Project Manager. During his career, Mr. Smithson has performed geotechnical analysis, civil design, and environmental assignments and functioned as a survey party chief.

WVDEP14176, Kanawha County. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at four sites (Marmet (Wells Drive), Cabin Creek (Stapler), East Bank (Garten), and the Mill Hollow Complex) in eastern Kanawha County.

WVDEP14387, Crooked Run #5, Harrison County. As a Senior Engineering Technician, performed research of geological data and mine maps, collected and reviewed water quality data, coordinated drilling activities, and assisted in the design of open limestone channels. Assisted in the development of construction plans and specifications for the project. The Crooked Run #5 project is comprised of six (6) work sites. These sites included numerous abandoned (draining) mine portals, refuse areas, a bench pond, trash dump areas and miscellaneous mine debris and subsidence areas.

Abandoned Mine Lands, Statewide Contract, Various Locations, West Virginia. As a Project Surveyor, Mr. Smithson provided services for topographic mapping for various Abandoned Mine Land (AML) projects throughout West Virginia. During these projects he provided topographic mapping and coordinated aerial photogrammetry. This data was incorporated in the design of landslide correction, retaining wall design, site grading, drainage improvements, acid mine drainage collection and neutralization, water line upgrade and extensions. Work on these projects also included: establishing horizontal and vertical control surveys for aerial photogrammetry mapping, baseline layout, referencing control points, generating check cross sections and site surveys including all physical and topographic features of each unique site.

West Virginia Department of Environmental Protection, Photogrametric Control Surveys, Various Locations, West Virginia. Work performed by Mr. Smithson on these projects included establishing horizontal and vertical control surveys for aerial photogrammetry mapping, baseline layout, and referencing control points. This work was performed utilizing GPS and conventional survey methods.

Mine Safety and Health Administration - Martin County Coal, Slurry Impoundment Failure Investigation, Martin County, Kentucky. As a Project Geologist, Mr. Smithson's duties included the coordination of drilling activities with multiple drilling crews supported by a team of engineers and geologists. He supervised and participated in the subsurface investigation logging activities, the creation of bedrock contour maps, report preparation, and analytical testing on samples extracted from the drilling efforts.

CSX Hotels, Inc., d.b.a. The Greenbrier, White Sulphur Springs, West Virginia. As an Environmental/Geotechnical Geologist, Mr. Smithson was responsible for subsurface investigation activities, in an alluvium/karst aquifer type to determine overburden and bedrock descriptions and groundwater flow analysis, along with the supervision of multiple environmental delineation crews. As a Geologist, assisted the Licensed Remediation Specialist in performing site characterization investigations at the four parcels entered into the West Virginia Voluntary Remediation Program. Work tasks included performing Geoprobe® direct-push investigations, groundwater sampling, landfill gas monitoring, and surface water and sediment sampling.

USACE West Virginia Ordnance Works, Point Pleasant, WV. Performed as the technical manager for the former West Virginia Ordnance Works (WVOW) NPL Site located in Point Pleasant, WV consisting of over 8,000 acres. This site has two groundwater pump and treat systems that require weekly maintenance along with over 200 monitoring and extraction wells. Associated responsibilities included; preparing scopes of work and budgets, selecting consultants/contractors, overseeing consultant/contractor work, meeting with Region 3 EPA, WVDEP, and WVDNR and distributing work to others within the district when necessary.

USACE Section 202 Program, Various Sites in WV, VA, & KY. As a geologist in the HTRW section for the Huntington District, performed multiple environmental site assessments for the Section 202 Flood Prevention Programs in West Virginia, Virginia, and Kentucky. One notable project for Dickenson County Schools in Virginia was selected as project of the year for the Huntington District for FY2012.

USACE Solutia, Nitro, WV. As a Geologist with the HTRW section for the Huntington District, represented and coordinated directly with the EPA Regon 3 Project Manager. Responsibilities included overseeing all aspects of the construction of 3 bentonite slurry walls to help resolve contamination issues at the site.

EDUCATION (Degree, Year, Specialization)	
B.S., 1999, Geology	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State) Licensed Professional Surveyor, 2007, WV OSHA 40-Hour HAZWOPER Certification, 1999, WV

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
McCrady, Charles, E.I.T. Mining Engineer	5	5	4

Brief Explanation of Responsibilities

Mr. McCrady is an Engineer-In-Training and Task Manager at Baker with a background in geotechnical and mining engineering. His experience includes subsurface investigations, foundation design, mine permitting, hydrogeology, coal refuse disposal alternatives analysis, water line feasibility studies, reclamation of abandoned mine lands, including , earthwork, channel design, subsidence investigations and reclamation of coal refuse piles. He also has an extensive knowledge of both the Clean Water Act and NEPA and is responsible for these components of coal mine permitting and compliance at Baker.

WVDEP, Various Counties. Phase I Water Supply Feasibility. Conducted a feasibility study which included: on-site interviews with residents, local agencies, and government officials, research using public and private sources, and collecting water samples within project area to determine impacts past mining activities imposed on private water supplies. Provided alternatives and recommendations to identify the most cost-effective remedial measures that could be made.

WVDEP14387, Harrison County. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at six (6) sites at the Crooked Run #5 Complex in Harrison County near Clarksburg.

WVDEP14800, Marion County. Drilling program development and the preparation of construction plans and specifications for the abatement of mine subsidence at four (4) sites in or near the City of Fairmont. The project "Fairmont Five Subsidence," included grout injection as well as surface depression regarding and minor drainage improvements.

WVDEP, Miller Mountain Waterline Feasibility Study. Performed research of geological data and mining maps, evaluated impacts of past mining activities on groundwater within the study area, and evaluated existing water distribution systems. Project included performing field research and sampling of surface and groundwater, plotting laboratory test results on Piper Trilinear Diagrams, identifying possible solutions to water quality problems, and providing preliminary construction cost estimates for recommended alternatives. The Miller Mountain Waterline Feasibility Study included detailed research of the local hydrology, hydrogeology, geology, and past mining activities, as well as collection and analysis of representative water samples and interviewing residents. Conclusions regarding the impact of that past mining activities have had upon local hydrogeology conditions as well as on water quality and quantity were formulated based upon information collected as part of the investigation. Finally, the report presented recommendations regarding remedial actions including extension of the Miller Mountain water distribution system and upgrades to the existing treatment facility.

WVDEP, Preston County. 9 County Roads Feasibility Study. Performed research of geological data and mining maps, evaluated impacts of past mining activities on groundwater within the study area, and evaluated existing water distribution systems. Baker was selected to provide the engineering services necessary to develop a water supply study for the specified area. The object of the study was to investigate the area's current water supply, make a determination as to how it has been affected by past mining, and recommend alternatives for water supply replacement. Baker compiled information and documentation to support an AML & R grant request to OSM for funding to extend and/or install water systems in impacted areas. The work was performed in 2 phases. The purpose of Phase 1 was to determine the potential impact of past mining activities on water supplies within the study area. When a potential impact was established, Phase 2 began, which involved a detailed investigation of mining history, geology, hydrogeology, and water supply sources.

Foundation Mining, L.P., Design/Permitting for Shaft and Slope Site, Surface Facilities, Batch Weight System and RR Spur and Siding. Assisted in preparation of permit for Foundation Mine Surface Facilities. Prepared PA DEP permit applications for the slope, shaft, railroad, and surface facilities. Assisted in design of all sites, provided E&S design for all sites, constructed pre- and post-hydrologic and hydraulic models on streams to analyze potential flooding, conducted resident interviews, and collected ground and surface water samples. Responsible for E&S design and floodplain analysis using HEC-RAS.

EDUCATION (Degree, Year, Specialization)	
B.S., 1986, Environmental Conservation	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	**REGISTRATION (Type, Year, State)**
American Society of Civil Engineers	Engineer-In-Training, 2006, WV

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
See, John, P., P.E., P.S. Mining Engineer	20	30	20

Brief Explanation of Responsibilities

Mr. See's responsibilities include technical oversight, and quality control for transportation and mining related projects throughout the state. Mr. See is a registered professional civil engineer and a registered professional surveyor. His experience covers numerous projects for mine development studies and mine production as well as refuse disposal and coal transportation. Wok has included permitting for surface and underground mines as well as refuse disposal and preparation plant facilities. Duties ranged from reserve investigation and feasibility evaluation to mine development and subsequent daily mine production operations.

Work experience has included railroad, bridge and highway design. Duties ranged from horizontal and vertical alignments, drainage computations, supervised drafting of construction plans, developed construction specifications, and estimated contract quantities for highway and railroad design.

Work experience includes Associate Professor of Mining Engineering Technology, at West Virginia Institute of Technology in late 1970 and early 1980. During this engagement, Mr. See developed and presented course lesson plans and problem analysis sessions as well as assisted in the development of laboratory experiments and student advising.

WVDEP 14387, Harrison County. Wet mine seals, Dry mine seals, the installation of bat gates, open channel design, culvert design, sediment control design, structure removal and reclamation, grading and revegetation.

WVDEP 14439, McDowell County. Wet mine seals, open channel design,, culvert design, underdrains, sediment control design, reclamation grading and revegetation.

WVDEP14800, Marion County. Drilling program development and the preparation of construction plans and specifications for the abatement of mine subsidence at four (4) sites in or near the City of Fairmont. The project "Fairmont Five Subsidence," included grout injection as well as surface depression regarding and minor drainage improvements.

Assisted in the preparation of the Buffalo Mountain Surface Mine Permit application in Mingo County, Hill Fork Surface Mine Permit Application in Boone County and the Bragg Fork Refuse impoundment in Boone County.

EDUCATION (Degree, Year, Specialization)
B.S.C.E., 1967, Civil Engineering
M.S.C.E., 1971, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers	Professional Engineer, 1972, WV Professional Surveyor, 1995, WV

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

SURVEYING AND MAPPING

SURVEY EQUIPMENT AND SOFTWARE
Survey/Global Positioning System (GPS)
Leica System 500 - SR 530 RTK - GPS Receiver
Leica GS50 C/A Code Receiver with Racal Correction Service
Trimble Pathfinder Pro XRS - with Omnistar Correction Service
Trimble 4000SSi - Dual Frequency Receiver
Trimble - RTK - Dual Frequency Receivers

Pipe/Cable Locators
Metrotech Model 9890
CAT & Jenny Locators
Metrotech Model 810

Total Stations
Topcon GTS 3B
Nikon DTM A5LG
Wild TC 2000

Total Stations with Onboard Data Collection
Leica TCRM 1103 – Motorized w/Reflectorless EDM
Leica TCA 1103 - Robotic w/Auto-Target Recognition (ATR)
High Precision Wild T3

Data Collectors
Trimble TSC2
PENTAX SC5
Leitz SDR33

Levels (Engineering)
Zeiss Ni 2
Leica NA 2002 Digital Level w/2 rods
Wild N-3
Zeiss Ni 1

Magnetic Locators
Chicago Steel Tape - FT - 60
Schoenstedt

Fathometer
1 – Innerspace Tech Model 456 – 200 KHz 8° Transducer

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

CD Writer
Hewlett Packard HP Sure Store CD Writer 6020es
Software: Easy CD Pro 95 Version 1.0 and Easy CD Pro Win 3.1 Version 3.0

Server
Compaq Proliant 5500

Pentium II Processor Xeon 400 MHz
1.7 GB Memory
106 GB Disc Storage

External 40/80 Compaq DLT Drives

1.2 Terrabyte Network Attached Storage

Software
BINGO – AERIAL, version 4.0
MrSID, version 1.3
j f k RABATS/BRATS, June 1997
ABC32, version 1.3
IRAS – C, version 8.0
Adobe Photo Shop 5, version 5.05
CADDMAPP/DGN, version 5.8.3
ERDAS Imagine, version 8.5
ImageStation Digital Mensuration-ISDM, version 4.0
ImageStation Base Rectifier-ISBR, version 4.0
ImageStation DTM Collection-ISDC, version 3.2
ZI Ortho Pro/Geo Media, version 3.1 MicroStation – J & SE versions

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
No. 6 Shaft Dewatering Pipeline Whitely, Pennsylvania	Cumberland Coal Resources, LP 158 Portal Road, PO Box 1020 Waynesburg, Pa 15370	Prepare permit submission, design, construction plans and proposed reclamation methods for dual dewatering borehole and pumps, lined holding pond, HDPE mine water pipeline from the underground mine sump to a coal refuse slurry impoundment including E&S control, HDPE pipeline, stream crossings, pond, and geomembrane pond liner.	$49,400 (Fee)	95%
Emerald Refuse Area No. 3 Waynesburg, Pennsylvania	Emerald Coal Resources, LP 158 Portal Road, PO Box 1020 Waynesburg, Pa 15370	Prepare permit submission and construction plans for a coal refuse disposal site and slurry impoundment including E&S control, diversion and collection ditches, spillways, staging, and stability analyses.	$778,279 (Fee)	98%
Development of a Long-Term Control Plan for Combined Sewer Overflow Abatement Pittsburgh, PA	City of Pittsburgh Department of Engineering and Construction Pittsburgh Water and Sewer Authority Pittsburgh, PA 15219	Historical Data Review, GIS Based Sewer System Mapping, GPS Mapping, CCTV Inspection, Flow Metering Installation, Water Quality Monitoring, Agency Coordination, and Public Involvement	$7,500,000 (Fee)	98%
National Pipeline Mapping System GIS Database Repository Services and Digital Data and Map Distribution Nationwide	U.S. Department of Transportation's Research and Special Programs Administration and Office of Pipeline Safety, Washington, D.C.	Baker is maintaining the national geospatial data repository for the National Pipeline Mapping System (NPMS)	$4,116,808 (Fee)	75%
General Environmental Consulting Services and Technical Support Contract Various Sites in Pennsylvania	Pennsylvania Department of Environmental Resources Harrisburg, Pennsylvania	Services include risk assessments, site investigations, remedial feasibility studies, remedial action design, construction inspection, Health & Safety, storage tank management, and industrial hygiene services	$12,000,000 (Fee)	90%

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

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRM'S RESPONSIBILITY
General Investigation Feasibility Study, Powell River Basin Lee County, Virginia	Feasibility level engineering design, cost estimating, and reporting for reclamation of numerous abandoned mine sites in the Powell River Basin	David Miller Associates 130 Park St SE Vienna, VA 22180	12/2010		$79,071 (Fee)

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)**
Lenox/Cuzzart Waterline Feasibility Study West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	$48,699 (Fee)	2006	N/A (Study)
Lenox/Cuzzart Waterline Feasibility Study West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	$48,699 (Fee)	2006	N/A (Study)
Buckeye Reclamation Landfill CERCLA Site, Remediation Design and Const. Mgt. Belmont County, OH	CONSOL Energy, Inc. 1800 Washington Road Pittsburgh, PA 15241	$1,400,000 (Fee)	2005	Yes
Leslie (Nelson) Drainage and Portal West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	$9,996 (Fee)	2005	N/A (Study)
Marmet, East Bank, Cabin Creek, and Mill Hollow Complex Drainage and Portals Kanawha County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	$121,524 (Fee)	2008	Yes
Crooked Run #5 Drainage, Refuse and Portals Harrison County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	$82,939 (Fee)	2009	Yes
Maybeury (Oakley) Landslide McDowell County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	$54,683 (Fee)	2010	Yes
Fairmont Five Subsidence Marion County, WV	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	$65,659 (Fee)	2010	Yes

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.

Michael Baker Jr., Inc. (Baker) has been providing abandoned mine lands (AML) reclamation and acid mine drainage (AMD) remediation since the federal government first enacted legislation. Our work experience in AML/AMD started with Operation Scarlift in the 1970's, and since 1983, we have been providing our engineering services in these areas to the West Virginia Department of Environmental Protection (WVDEP), Pennsylvania Department of Environmental Protection (PADEP), Ohio Department of Natural Resources (ODNR), and U.S. Office of Surface Mining (OSM), to name a few. Our recent experience on numerous AML reclamation and AMD remediation projects for the WVDEP, ODNR, PADEP and Nashville District of the U.S. Army Corps of Engineers, illustrates our track record for the completion of assignments on time and within budget.

Although the projects presented in the Project Experience Matrix of Attachment "C" of the Consultant Confidential Qualification Questionnaire (CCQQ) clearly show Baker's AML/AMD design, water system design, and related experience, they only hint at the extensive human and material resources which especially qualify our firm for this project. The following narrative further describes our experience and provides insight into the special capabilities of Baker.

Comprehensive Services

The civil and mining engineering, surveying and mapping, and environmental and geotechnical services of Michael Baker Jr., Inc. are available to immediately respond to the needs of WVDEP. Working from our Charleston, West Virginia office, which provides excellent highway and airline transportation, Baker can provide the full spectrum of services needed in water distribution system design as well as mine reclamation and mine drainage abatement operations. Some of the more important services our firm can provide to WVDEP include:

- Mapping and Aerial Photography
- Surveying
- Environmental Evaluations and Assessments
- Data Acquisitioned Interpretation
- Geotechnical Engineering
- Engineering Design
- Plan/Specifications Preparation
- Construction Management

Since we can furnish all of the engineering related services required for abandoned mine lands reclamation projects, we can work very efficiently and meet the strictest of schedules. Our efficiency is further heightened by the use of mapping systems and AutoCAD compatible design software to perform computer-assisted mapping, design and drafting.

Baker's aerial light detection and ranging (LiDAR) service provides an efficient and affordable high-definition solution to digital terrain model surface creation and planimetric feature collection. Baker owns and operates the latest in aerial LiDAR and positioning technology for outstanding productivity and survey efficiency. From a single aerial collection session, our aerial LiDAR system offers the ability to accurately capture and classify features that are important to you and the requirements of your project. With up to four range measurements, including first, second, third, and last return-point capture, you can be assured that all project data is accurately captured and available for classification

Baker LiDAR provides the ability to accurately and effectively capture point-cloud terrain data for orthophoto rectification and planimetric or topographic map compilation. Products can be delivered as bare-earth DEM files, with the option of upgrading to digital terrain models for contour generation.

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.

Plans and specifications were prepared for the reestablishment of the unnamed tributary, grading of spoil and refuse to provide positive drainage, collection of acidic seepage, sealing of mine entries, AMD conveyance and treatment, and soil covering and revegetation of refuse materials.

Specifications for revegetation and reforestation of selected areas included soil amendments, seed mixtures, tree plantings, and

mulching. Stream restoration designs required to reconstruct two unnamed tributaries in the Potomac watershed employed natural design techniques including a serpentine layout with pools and riffles.

The site included numerous mine seals and collection points to abate the AMD seepage. Mine seals consisting of clay seals, aggregate material, and PVC outlet pipes were proposed, with modified entries required to meet site specific artesian conditions. Conveyance pipes and limestone lined conveyance channels were provided to transfer AMD to a treatment system consisting of an equalization pond, successive alkalinity producing system (SAPS pond), and aerobic wetland. Project construction was completed in 2009.

Summary

As a large, diverse engineering firm, Baker has facilities available to properly conduct water distribution extension, abandoned mine land reclamation, and AMD remediation projects. The use of in-house facilities can speed project completion and facilitate tracking of progress. The in-house facilities include:

- Data Processing
- Interactive Graphics and AutoCAD
- Word Processing
- Printing and Reproduction

Baker's qualifications to provide engineering services for waterline and abandoned mine land projects, we offer the following response to the evaluation factors:

1. **Bidder Experience** in all aspects of surveying and mapping, subsurface investigation, and design engineering.

   - Extensive experience in each area. Items 17 and 18 of the CCQQ describe various projects for which we provided these services during the last five years. Projects listed under item 12 of the CCQQ describes typical of various projects for which we provided our services to WVDEP.

   - Strong capabilities in each area. Item 13 of the CCQQ lists our personnel by discipline. Our large multi-disciplinary staff is experienced in all aspects of water distribution and AML reclamation; civil, environmental, mining, geotechnical and reclamation engineering applied to surface and underground coal mining; land restoration; stream and water restoration; and land use and natural resources planning. The attached "Project Experience Matrix" show various projects performed for various clients and also show primary participants responsible for these projects.

ATTACHMENT "C"

AML AND RELATED PROJECT EXPERIENCE MATRIX

RFQ No. DEP15585

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 exceed 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 said affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Michael Baker Jr., Inc.

Authorized Signature: Russell E. Hall Date: March 22, 2012

State of West Virginia

County of Kanawha, To-wit:

Taken, subscribed, and sworn to before me this 22nd day of March, 2012

My Commission expires 4/14/2013, 20___

AFFIX SEAL HERE

NOTARY PUBLIC Stephanie A. Hensley

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
STEPHANIE A. HENSLEY
c/o MICHAEL BAKER JR., INC.
5088 WEST WASHINGTON ST.
CHARLESTON, WV 25313
My commission expires April 14, 2013

STATE OF WEST VIRGINIA
PURCHASING DIVISION

PURCHASING AFFIDAVIT