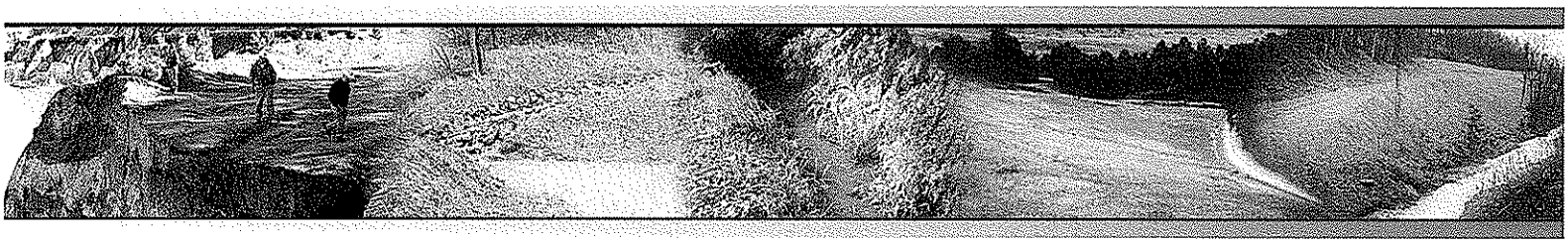

Expression of Interest to Provide Professional Services for the WVDEP, Office of AML&R

Reynoldsville Refuse Design

Harrison County, West Virginia
RFP Number DEP14992

submitted to:

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

submitted by:

Michael Baker Jr., Inc.
5088 Washington Street West
Charleston, West Virginia 25313

May 18, 2010

Baker

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

May 18, 2010

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

Attention: Mr. Chuck Bowman, Buyer

Re: Expression of Interest to Provide Professional Services for the WVDEP, Office of Abandoned Mine Lands & Reclamation RFP Number DEP14992

Dear Mr. Bowman:

Michael Baker Jr., Inc. (Baker) is pleased to submit this Expression of Interest to provide professional engineering services for reclamation measures for the ***Reynoldsville Refuse Design Project*, Harrison County, West Virginia**. 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, Office of Abandoned Mine Lands and Reclamation.

We have illustrated our ability to deal with multiple projects without degradation to the level and quality of service. We have selected a subcontractor located in West Virginia to assist us in the key areas of drilling, and soils and water testing. We feel this firm, NoVel Geo-Environmental, P.L.L.C., will compliment Baker as we proceed with tasks assigned under this contract

Baker's staff is experienced in all aspects of AML/AMD projects: civil, environmental, mining, geotechnical and reclamation engineering applied to surface and underground coal mining; land restoration; landslide correction; stream and water restoration; land use; and natural resource planning. 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 any assignments that may arise from this contract. If you have any questions or require additional information concerning our qualifications, experience or approach, please contact the undersigned.

Very truly yours,

MICHAEL BAKER JR., INC.

Patrick W. Fogarty, P. E., P.S.
Civil Services Group Manager

Enclosure

Table of Contents

Corporate History & Experience A

"A leader in designing, building, and operating infrastructure worldwide through superior project team performance and customer relationships."

Then ...

More than 70 years ago, when Michael Baker Jr. founded the Baker organization, he did it with a vision.

A vision of a company that would someday provide quality engineering services to a vast cross-section of clients throughout the globe.

Founded in 1940 as a Civil engineering and surveying firm, Baker has grown over the years helping to shape the world in which we live; providing engineering, construction and O&M services for projects ranging from airports to bridges; concert halls to communication systems; municipal water supply to wastewater disposal; skyscrapers to stadiums; from turnpike to transmission pipelines; from mining to post mining reclamation; and oil and gas operations and maintenance.

Now ... Michael Baker Corporation (http://www.mbakercorp.com/) provides engineering and energy expertise for public and private sector clients worldwide. The firm's primary services include engineering design for the civil infrastructure and transportation markets, environmental services, facilities, architecture, construction management, and operation and maintenance of oil and gas production Baker has more than 4,800 employees in over 40 offices across the United States and internationally. Baker is ranked among the top 10% of the 500 largest U.S. engineering/construction firms.

Evidence of our experience in surveying, subsurface investigation/geotechnical engineering and design engineering for civil and mining facilities is highlighted below:

Baker Civil

A sampling of civil engineering services includes surveying, planning, mapping, GIS, and engineering design services for a wide variety of projects including: mining facilities, abandoned mine lands reclamation, fiber optic cable routes, pipelines, hydroelectric development, dams and impoundments, marine facilities, airports and highways, and recreational facilities. The group has the ability to take a project from the earliest phases of planning, through engineering to the preparation of plans and specifications, and into construction, where resident engineering and inspection services are provided if required by the client. Typical assignments include:

- Surveying and Mapping
- Abandoned Mine Land Reclamation
- Acid Mine Drainage Abatement and Stream Restoration
- Mine Permitting
- Facilities Planning
- Environmental Evaluations and Assessments
- Land Use and Natural Resources Planning

- Groundwater Assessment
- Site Development
- Disposal Site Design and Permitting, including Residual Waste Disposal Facilities
- Municipal Water and Wastewater Treatment
- Water Supply Distribution System Design
- Geotechnical engineering for mining and mine reclamation, landslide correction, highway, disposal, and site development projects, including planning and oversight of subsurface investigations and subsequent foundation design
- Construction Management

Our public sector clients include all levels of government as well as department of defense clients. In the private sector, services are provided to telecommunications, electric, gas, oil, and coal mining companies; developers; and commercial and industrial clients.

The Client Confidential Qualification Questionnaire (CCQQ) and Section C, Corporate Specialized Experience and Demonstrated Abilities, summarizes Baker's experience related to abandoned mine land reclamation and acid mine drainage control. These experience listings clearly illustrate Baker's extensive experience in surveying, subsurface investigation, and design engineering for AML reclamation including waterline extension in AML impacted areas, and AMD remediation. Baker's role in subsurface investigation consists of planning, coordinating, and overseeing the drilling program, as well as preparing required geotechnical designs. A reliable subcontractor we have worked with for more than 10 years performs actual drilling and laboratory testing of soil and water.

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
AML CONSULTANT CONFIDENTIAL QUALIFICATION QUESTIONNAIRE

Attachment "B"

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
DEP14992, Harrison County	**5/18/10**	**25-1228638**

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
Michael Baker Jr., Inc.	**5088 West Washington Street, 2nd Floor** **Charleston, West Virginia 25313**	

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/ 304-769-0821 / Russell E. Hall / 7 (Charleston, WV), 20 (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, Assistant Vice President (724) 495-4302**

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

165 ADMINISTRATIVE	6 ECOLOGISTS	4 LANDSCAPE ARCHITECTS	57 STRUCTURAL ENGINEERS
14 ARCHITECTS	1 ECONOMISTS	5 MECHANICAL ENGINEERS	**18 SURVEYORS**
6 BIOLOGIST	3 ELECTRICAL ENGINEERS	**5 MINING ENGINEERS**	23 TRANSPORTATION ENGINEERS
42 CADD OPERATORS	26 ENVIRONMENTALISTS	23 PHOTOGRAMMETRISTS	126 OTHER
4 CHEMICAL ENGINEERS	1 ESTIMATORS	7 PLANNERS: URBAN/REGIONAL	
57 CIVIL ENGINEERS	**30 GEOLOGISTS**	7 SANITARY ENGINEERS	
16 CONSTRUCTION INSPECTORS	0 HISTORIANS	13 SOILS ENGINEERS	
16 DESIGNERS	12 HYDROLOGISTS	0 SPECIFICATION WRITERS	698 TOTAL PERSONNELL (Charleston and Pittsburgh Area Offices)
11 DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 15

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

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

11. OUTSIDE KEY CONSULTANTS/SUB-CONSULTANTS ANTICIPATED TO BE USED. Attach "AML Consultant Confidential Qualification Questionnaire" for each if copy is not on file with AML.

NAME AND ADDRESS	SPECIALTY	WORKED WITH BEFORE
(If Required) **Novel Geo-Environmental, P.L.L.C. 806 B Street St. Albans, West Virginia, 25177**	**Drilling and Soil & Water Testing**	X Yes (10 years) ___ No
		___ Yes (10 years) ___ No
		___ Yes (10 years) ___ No
		___ Yes (10 years) ___ No
		___ Yes (10 years) ___ No
		___ Yes (10 years) ___ No
		___ Yes (10 years) ___ No
		___ Yes (10 years) ___ No
		___ Yes (10 years) ___ No

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

A. Is your firm 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 250 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, we are also currently assisting PADEP and ODNR with AML reclamation and AMD remediation designs. Table 12-1 provided at the end of this Item 12 of the CCQQ highlights thirty (30) of the AML reclamation/AMD remediation projects completed for WVDEP in recent years. This abbreviated project listing highlights the services rendered by Baker to address the various AML/AMD problems that are typical of AML reclamation and similar projects. The "AML and related Project Experience Matrix" table following this CCQQ shows our experience on 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) projects shown in Table 12-1 at the end of this Item 12 of CCQQ, Baker was involved in soil analysis for 21 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) projects shown in Table 12-1 at the end of this Item 12 of CCQQ, twenty six (26) projects needed hydrology/hydraulics expertise of the AML/AMD design group.

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

YES Description and Number of Projects:

Since 1983 Baker has been designing AML/AMD remediation projects for WVDEP. For all the projects to date, the WVDEP provided Baker with contour maps developed from aerial photography of the project site. Baker's responsibility was to verify the topographic map by field check surveying.

Baker has a survey and photogrammetric department with a staff of 40. Baker routinely performs aerial photography and contour mapping for federal and several state agencies as well as for private clients. Baker's Survey and Photogrammetric Department is as old as the company itself. During the last five years Baker has completed more than 50 mapping projects. Nineteen (19) of those projects completed within the last two years are listed as follows:

Project	Area	Scale / Contour Interval
City of Richmond, VA	63 square miles	1"=100' / 2'
City of Suffolk, VA	430 square miles	1"=100' / 2'
Elkhart County, IN	464 square miles	1"=100' / 2'
Saint Joseph County, IN	457 square miles	1"=100' / 2'
West Virginia DOH-Corridor H, Section 6 & 7 Reroutes	12 linear miles	1"=50' / 2'
Pennsylvania DOT – Missing Ramps I-79/I-279	1000 acres	1"=50' / 1'
New Jersey DOT – Rte. 52 Somers Point – Ocean City	565 acres	1"=30' / 1'
Immigration and Naturalization Services Texas / Mexico Border Mapping	14 linear miles	1"=100' / 2'
Arizona DOT – SR 87	3.3 linear miles	1"=50' / 1'
Iowa Army Ammunition Plant – Omaha District COE	32 square miles	1"=100' / 2 and 1"=30 / 1'
Immigration and Naturalization Services – Mapping of 166 Port of Entry Border Sites	16,600 acres total	1"=50' / 1'
Pennsylvania DOT – Snyder County, SR 0015 – Section 088	8.3 square miles	1"=50' / 1'
Grand Parkway Association – Texas DOT	52 linear miles	1"=50' / 1'
City of Scottsdale, AZ	185 square miles	1"=100' / 2' and 1"=50 / 1'
Maricopa County Flood Control District, AZ - Salt/Gila River Basins	180 square miles	1"=100' / 4'
Pennsylvania DOT – Cambria County S.R. 6219 - Section 021	27.6 square miles	1"=200' / 5'
MAGLEV, Inc. Pittsburgh Area – High Speed MAGLEV Corridor	80 square miles	1:2500 / 2 meter
Louisiana Department of Transportation and Development – North-South Expressway	690 square kilometers	1:4800 / 1.5 meter
Arkansas State Highway and Transportation Department US 71 / I 40 to DeQueen	3000 square kilometers	1:7200 / 3 meter

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:

To date, Baker has designed eight (8) domestic waterlines for the WVDEP. In general, for each of these projects, Baker performed field surveying of proposed route, subsurface investigation for storage tank site foundation, water distribution system hydraulic modeling and analysis, 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 14 water resources studies that include the projects for which waterlines were designed.

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 systems. Evaluation and design of AMD abatement systems 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 20 AMD abatement systems. Three of these 20 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 recently been completed and are to be bid for construction. Two of these projects have been designed and constructed for U.S. Army Corps of Engineers.

Baker has designed nine 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.

INSERT Table 12-1

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:
Trimbath, William, D., P.E. **Assistant Vice President**	**9**	**14**	**6**

Brief Explanation of Responsibilities

Mr. Trimbath is the Regional Office Manager for Michael Baker Jr., Inc.'s, Beaver, Pennsylvania office which provides civil, mining, geotechnical, mapping and telecommunication services to various government agencies and private clients. He has 27 years experience in civil, mining, geotechnical and environmental engineering, primarily in management positions; has served as civil engineer, project manager for environmental assessment and remediation projects; mine subsidence projects, landslides remediations, waterline extension, and drainage improvements; assumes responsibility for overall administration of major contracts, including financial, engineering and construction; experience in estimating, cost control, and scheduling methods designed to meet tight budgets and schedules.

As Assistant Vice President of the civil engineering department in Beaver, PA, Mr. Trimbath was ultimately responsible for more than thirty AML reclamation projects studied and designed for the States of West Virginia, Ohio; and for the Corps of Engineers' Baltimore and Nashville Districts.

Dennison/Route 800 Reclamation Project for the Ohio Department of Natural Resources (ODNR) - Uncontrolled drainage and seepages from coal and clay mines causing metal precipitation in roadside ditch and over flowing onto a major high creating hazardous driving condition. The reclamation plan was developed following test drilling to identify AMD sources. Abatement design included an underdrain to intercept seepage, a sedimentation pond followed by wetland to precipitate iron, improving road-side ditch and the drainage outlet to nearby stream; preparation of construction plans, specifications, and cost estimate are part of this project.

Hardy Coal Company Bond Forfeiture Reclamation Project for the Ohio Department of Naturals Resources. The project involved surveying and mapping, reviewing geological data, mine maps; and providing design of the reclamation measures for the site including environmental assessment, regarding, collection ditches, stream relocation, placement of soil cover revegetation; and preparation of construction plans, specifications and cost estimates.

Maple Run Portals and AMD Reclamation for the West Virginia Division of Environmental Protection - Test drilling, site grading, sealing mine openings, drainage design, AMD treatment with limestone beds and aerobic Wetland; preparation of construction plans, specifications, and cost estimate.

Emoryville Mine Complex Reclamation for the West Virginia Division of Environmental Protection - Test drilling, water quality date review and site survey; design of AMD abatement including open limestone channels, SAPS, aerobic wetlands, in-stream AMD treatment with limestone fines, E & S Control, drainage design including diversion and collection ditches and underdrain; site grading and revegetation; construction plans, specifications, and cost estimate.

Feasibility Study for Ecosystem Restoration, Ely and Pucket Creek Subbasins of Powell River, Virginia for the Nashville District, U.S. Army Corps of Engineers - Site evaluation including geotechnical investigation, review of water quality data, determination of AMD sources at four sites, evaluation of AMD abatement alternatives; AMD abatement design including SAPS Cells, open limestone channel, metal precipitation ponds, aerobic wetlands and alkaline soil amendment; site grading, mine seals, diversion and collection ditches, E & S control, stream relocation; and preparation of plans, cost estimate and feasibility report.

EDUCATION (Degree, Year, Specialization)
Doctoral Studies, Civil Engineering; M.S., 1978, Civil Engineering; B.S., 1974, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers **American Society of Civil Engineers, Pittsburgh Geotechnical Group, Chairman, 1986-1987** **Society of American Military Engineers, Environmental Action Committee, Secretary** **Engineering Society of Western Pennsylvania**	**Professional Engineer, 1978, 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:
Chakravorti, N.K. (Hari) **Technical Manager III**	**26**	**16**	**9**

Brief Explanation of Responsibilities

Mr. Chakravorti has extensive knowledge and experience related to mining, geotechnical and material handling projects. His professional experience has encompassed research, project planning and analysis, project management and report preparation for both governmental agencies and private clients. He is responsible for conducting a wide range of technical studies and designs involving reserve analysis and mine planning; abandoned mine land reclamation, acid mine drainage abatement, coal preparation and waste disposal; material transport by overland conveyor, slurry and pneumatic pipelines; refuse reclamation, mine drainage, subsurface investigation and geotechnical analysis for the design of shafts, tunnels, highway pavements, bridge and building foundations; landslide correction; and mine subsidence control. Experience relevant to this project includes:

Abandoned Mine Land Reclamation Projects for the West Virginia Department of Environmental Protection (formerly WVDOE). Project Manager for over 100 of these AML projects. His responsibilities involved project management, development of concept design, and quality control on all phases of abatement design. The projects included reclamation of refuse piles, landslide corrections, designing surface drainage, subsidence stabilization, sealing mine openings, water resources studies and waterline extension design, stream restoration/re-location, and evaluation and design of AMD abatement measures.

Acid Mine Drainage Abatement (AMD) Feasibility Studies for the North Branch Potomac River Watersheds in Maryland and West Virginia, Ely and Puckett Creek watersheds of the Powell River basin in Virginia, and Huff Run watersheds in Ohio. Project Manager. These projects were performed for the Baltimore District and Nashville District Corps of Engineers and the Ohio Department of Natural Resources, respectively. Projects involved evaluation of the sites, AMD flow and characteristics, abatement alternatives, and designing of treatment systems including surface drainage, grading and reclamation of AMD sources, and development of construction costs for the AMD abatement measures. Recently completed projects include the Kempton Refuse and AMD project and projects identified under CCQQ Item 12 in Table 12-1.

Surface and Underground Mine Permitting Projects for various coal mining companies in Pennsylvania. Project Manager. Projects involved site investigations, environmental inventory and sampling, and preparation of surface and underground mining activities permit applications in accordance with the requirements of the regulatory agencies. Projects also included designing and permitting of several shafts and portal facilities, refuse disposal sites and slurry impoundments.

Management of Engineering Services Contracts for over 200 AML Projects in West Virginia, Ohio, Pennsylvania and for the Federal Office of Surface Mining. Principal Investigator and Coordinator. The projects required surveys, mapping, subsurface investigations, plans, specifications, and construction inspection. AML related problems included flood studies, watershed studies, stream restoration, mine subsidence, underground mine fires, mine drainage, vertical shaft filling, gob piles, landslides, refuse fires, grouting programs, and surface mine reclamation. Projects also included water supply extension design for AML problem area communities. Projects designed were over $35 million in construction costs.

Abandoned Mine Drainage Problem in the village of Barton, Ohio, for the Ohio Department of Natural Resources. Principal Investigator for the Responsibilities included evaluation of the problems (hillside instability, acid mine discharge, and stream pollution) and recommendation and preliminary designs of abatement measures. Responsibilities also included evaluation of the abandoned gob piles for their stability and the recovery potential of secondary resources from them.

EDUCATION (Degree, Year, Specialization)	
MS, 1977, Mining Engineering; MS Studies, 1975-76, Geotechnical Engineering; BS, 1960, Mining Engineering	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Institute of Mining, Metallurgical and Petroleum Engineers	**Professional Engineer, 1978, Pennsylvania**

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN. (Furnish complete data but keep to essentials.)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
Russell, Charles M., P.E. **Technical Quality Control**	YEARS OF AML DESIGN EXPERIENCE: **11**	YEARS OF AML RELATED DESIGN EXPERIENCE: **6**	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: **7**

Brief Explanation of Responsibilities

Mr. Russell has more than 38 years experience in civil engineering, primarily in management positions; has served as civil engineer, project engineer, project manager, manager of public works, department manager of foreign engineering and construction office, general manager of civil engineering office; has served on heavy industrial projects for design and construction of pipe lines, iron ore reduction plants, foundries, ceramic kilns, melt shops, and industrial furnaces; has been responsible for many feasibility studies, projects for photogrammetric mapping, soils investigation, barge mooring facilities, and port and dock facilities; experienced with projects for new facilities and projects for modernization and expansion of existing facilities; assumes responsibility for overall administration of major contracts, including financial, engineering and construction; experienced in estimating, cost control, and scheduling methods designed to meet tight budgets and schedules.

As Vice President of the civil engineering department in Beaver, PA, Mr. Russell was ultimately responsible until 1997 for more than sixty AML reclamation projects studied and designed for the State of West Virginia, Ohio, Pennsylvania, and for the U.S. Office of Surface Mining. Some of the recent AML projects for the WVDEP are as follows:

Twilight Burning Refuse Pile Reclamation Project for the West Virginia Division of Environmental Protection - Test drilling, temperature measurements, site grading design, slope stability, plans, specifications, and cost estimate. The site required regrading and quenching the unstable burning refuse to a stable slope.

Jed-Havaco Refuse Dump Reclamation Project for the State of West Virginia, Division of Environmental Protection – Subsurface Investigation, temperature measurement, stability analysis, drainage design, relocated stream channel design, grading design, Gabion retaining structure design, construction plans, specifications and cost estimate. The site was a burning refuse area dumped on valley wall blocking a perennial stream creating impoundment at the head of the valley. The site required draining the impoundment, excavating, cooling burning refuse, and backfilling and regrading, reestablishing stream channel, establishing sedimentation ponds, final reclamation, and revegetation. Total area reclaimed is about 35 acres.

Neibert-Taplin Water Supply Extension Project for the State of West Virginia, Dept. of Energy, Division of AML & R – Route identification and surveying, designing 8 inch and 6 inch main line and service lines for 6 communities extending over a distance of about 7 miles, subsurface investigation for 212,000 gallons water storage tank foundation over mined out area, design grout stabilization of mine workings; design booster pump station, telemetry, river crossings, railroad and highway crossings. Prepared construction plans, specifications and cost estimate. The groundwater resources (water supply for residents) of six communities in the project area were contaminated by pre-law (August 3, 1977) mining. The project required evaluation of the existing Logan County Public Service District's main waterline at Lyburn with regard to available pressure and quantity, and extending the system to provide water to the entire project area.

Fairmont Subsidence Project for the State of West Virginia, Dept. of Energy, Division of AML & R – Surveying, subsurface investigation, evaluation of mine workings, development of grout hole stabilization measures. Prepared construction plans, specifications and cost estimate.

Upper Creek Landslide and Mine Drainage Investigation Project for the West Virginia Department of Energy – Subsurface investigation, topographic survey, stability analysis, plans and specifications were developed for a landslide in Kanawha County, West Virginia. Drainage from abandoned mine workings were saturating a steep slope behind a private residence. Baker Engineers designed trench designs and a surface drainage collector system.

EDUCATION (Degree, Year, Specialization)	
M.S., 1970, Civil Engineering; M.P.W., 1970, Public Works; B.S., 1959, Civil Engineering	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State) **Professional Engineer, 1982, Alabama; Florida, 1979; Illinois, 1983; Indiana, 1983; New York, 1966; North Carolina, 1983; Ohio, 1968; Oklahoma, 1993; Pennsylvania, 1964; Tennessee, 1982; West Virginia, 1969**

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**	**15**	**15**	**17**

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, hydrologic and hydraulic analysis, and erosion and sediment control structures. He additionally has extensive experience in the design of water distribution systems, hydraulic structures, sanitary collection systems, and permitting of mining facilities. While at Baker he has worked on over thirty abandoned mine land reclamation projects which included reclamation of coal refuse piles, sealing of mine portals, subsidence grouting, passive and active water treatment, evaluation of pre-law mining impacts on drinking water supplies and design of waterline extension, and stream channel restoration. Many of these projects have been for the West Virginia Department of Environmental Protection, Abandoned Mine Lands and Reclamation Office. He has also been project engineer for over 30 water distribution projects located in OH, PA, and WV.

Kempton Refuse and AMD Project, West Virginia. West Virginia Department of Environmental Protection. Performed research of geological data and mine maps, review of water quality data, and design of AMD abatement measures including Open Limestone channels, successive alkalinity producing systems, aerobic wetlands and limestone ponds. Prepared construction plans and specifications for the project, which included site grading, mine seals, highwall elimination, collection and diversion ditches, Natural stream channel design, placement of soils cover, and revegetation.

Maple Run Portals and Tipple, West Virginia. West Virginia Department of Environmental Protection. Performed research of geological data and mining maps, review of water quality data, design of acid mine drainage abatement measures including open limestone channels, and aerobic wetlands. Prepared construction plans and specifications for the project, which included, site grading, mine seals, collection and diversion ditches, placement of soil cover, and revegetation.

Emoryville Mine Complex, West Virginia. West Virginia Department of Environmental Protection. Performed research of geological data and mining maps, review of water quality data, design of acid mine drainage abatement measures including open limestone channels, Successive Alkalinity Producing Systems, and aerobic wetlands. Prepared construction plans and specifications for the project which included erosion and sedimentation control measures, site regrading, mine seals, collection and diversion ditches, removal of abandoned barges and coal refuse from the North Branch of the Monongahela River, placement of soil cover, and revegetation.

Watson Portal and Refuse Reclamation, West Virginia. West Virginia Department of Environmental Protection. Performed research of geological data and mining maps, review of water quality data, design of acid mine drainage abatement measures including anoxic limestone drains, metals settling ponds, and open limestone channels. Prepared construction plans and specifications for the project which included erosion and sedimentation control measures, site regrading, mine seals, collection and diversion ditches, removal of abandoned barges and coal refuse from the North Branch of the Monongahela River, placement of soil cover, and revegetation.

Dennison/Route 800, Ohio. Ohio Department of Natural Resources, Division of Mines and Reclamation. Reviewed geological data, mining maps, and water quality data, provided design of mine drainage abatement measures including a metals precipitation pond and aerobic wetland. Provided environmental assessment documentation, and design of storm sewers for surface water, and conveyance pipes for mine water. Prepared construction plans and specifications for the project, which included erosion and sedimentation control measures, site regrading, mine seals, collection and diversion ditches, placement of soil cover, and revegetation.

Hardy Coal Company Bond Forfeiture, Ohio. Ohio Department of Natural Resources, Division of Mines and Reclamation. Reviewed geological data, mining maps, and provided design of reclamation measures required for the forfeiture site. Also provided environmental assessment documentation, and prepared construction plans and specifications for the project including erosion and sedimentation control measures, site regrading, collection ditches, 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:
Dziubek, John A., P.E. **Project Manager**	**15**	**13**	**4**

Brief Explanation of Responsibilities

Mr. Dziubek has performed and managed engineering and design projects for more than 30 years. The projects range from subsurface investigations; building, industrial, and heavy and highway foundations; and site closures at industrial facilities; to remedial design and remedial action at Superfund sites. He has managed public and private sector projects for the Corps of Engineers, U.S. Navy, State DOT's, and major industrial clients. Larger projects have ranged from $1 million to $10 million and have required civil, geotechnical, mining and environmental engineering expertise.

Various Reserve Analyses and Mine Planning Projects, Ohio, Pennsylvania, Virginia, Kentucky, West Virginia and North Carolina. Ohio Edison, Veon Coal, Ashland Coal, Virginia Pocahontas, Koppers Company. Project Manager. Managed reserve analysis and mine planning projects for coal mines. These project required computer models for determining mineral reserves, stockpile inventories, mining simulation, long range planning, cost studies, mine drainage, mine subsidence, and production monitoring.

Geotechnical Engineering Services, Ohio, West Virginia and Pennsylvania. U.S. Office of Surface Mining. Project Manager. Managed engineering services contract for more than 40 abandoned mine lands projects for the U.S. Office of Surface Mining. The projects required surveys, mapping, subsurface investigations, plans, specifications, and construction inspection. Mining-related problems included flood studies, mine subsidence, underground mine fires, mine drainage, vertical shaft filling, gob piles, landslides, refuse fires, grouting programs, and surface mine reclamation. Construction costs for project implementation were more than $12 million.

Various Reclamation Projects, Ohio and West Virginia. Ohio Department of Natural Resources and the West Virginia Department of Natural Resources. Project Manager. Managed abandoned mine lands projects for the Ohio Department of Natural Resources and the West Virginia Department of Natural Resources. Projects included mine subsidence, flood studies, landslides, mine drains, mine seals, mine fires, mine stabilization and refuse bank reclamation. Construction costs were over $5 million.

Various Coal Refuse Facilities Geotechnical Design, Ohio, Pennsylvania, West Virginia, Illinois, Virginia and Kentucky. North American Coal, Bethlehem Mines, Diamond Shamrock Coal, Exxon Coal, Sierra Coal. Geotechnical Manager. Supervised the geotechnical design of coal slurry impoundments and coal refuse embankments. Upstream and downstream construction methods were used. Design analyses included slope stability, hydrology and hydraulics, and structural design of primary and emergency spillway systems.

Unimin Trailings Dam Expansion, Virginia. Unimin Corporation. Project Manager. Managed design and construction phase of a phased capacity increase of a tailings dam for an industrial glass sand plant and quarry. The main embankment and dike were raised, the spillway redesigned, and the outlet pipe extended. Piezometric instrumentation was installed to monitor the phreatic surface through the main embankment.

EDUCATION (Degree, Year, Specialization)
M.S.C.E., 1966, Civil Engineering; B.S.C.E., 1964, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers **Society of American Military Engineers**	**Professional Engineer, 1969, PA; Professional Engineer, 1990, WV** **Professional Engineer, 1991, OH**

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:
Elious, Matthew W. **Senior Mapping Supervisor**	-	-	-

Brief Explanation of Responsibilities

Mr. Elious is experienced in Photogrammetric Mapping production and systems development. For the past ten years, Mr. Elious has been involved in the management of mapping projects from small scale (i.e. 1:250,000; 1:50,000) to large scale (i.e. 1"=20' to 1"=100') engineering plans. Mr. Elious also has experience in the system engineering and streamlining of Digital Mapping Processes through CADD procedures in the MicroStation, AutoCAD, and TerraModel environments.

Rt. 60 Environmental Assessment, Kanawha County, West Virginia. West Virginia Department of Highways. Sr. Mapping Supervisor. Performed fully analytical aerial triangulation (FAAT) of WVDOH Route 60 environmental assessment project and supervised photogrammetric compilation of planimetric of DTM's at 1"200' map scale.

Township Water Main, Schuylkill Township, Pennsylvania. Philadelphia Suburban Water Co. Project Manager and Production Manager. Managed digital mapping of corridor of water mainline for the Township.

Digital Mapping, New Jersey. New Jersey Department of Transportation. Project Manager and Production Manager for digital mapping of + 10 miles of Jarvis Road and Williamston Road Corridors at metric scale 1:300, 0.25 m contour interval.

Mendham Base Map, Mendham Township, New Jersey. Mendham Township. CADD/Mapping Supervisor and CADD Editor. Base mapping for GIS applications for the Township of Mendham, New Jersey. Mapping scale 1"=100', 2' contour interval.

Brick Township Drainage Project, New Jersey. Brick Township. CADD/Mapping Supervisor and CADD Editor. Mapping of drainage analysis for Brick Township, New Jersey. Mapping scale 1"=50', 1' contour interval.

Fully Analytical Aerial Triangulation (FAAT), Central Pennsylvania. United States Geological Surveys. Sr. Mapping Supervisor. Performed fully analytical aerial triangulation (FAAT) of Central Pennsylvania area comprising 2,154 aerial photographs simultaneously adjusted for USGS Work Order #004 to provide Digital Orthophoto Quarter Quad (DOQQ) products.

Fully Analytical Aerial Triangulation (FAAT), Missouri River. U.S. Army Corps of Engineers, Omaha District. Sr. Mapping Supervisor. Performed fully analytical aerial triangulation (FAAT) utilizing airborne GPS for the Missouri River Reach 3 project comprising 242 aerial photographs. Supervised photogrammetric stereo compilation of 150 Digital Terrain Models (DTM) to be used for Digital Orthophoto differential rectification and production.

Fully Analytical Aerial Triangulation (FAAT) of Bolivar Bridge, Pennsylvania. Pennsylvania Department of Transportation. Sr. Mapping Supervisor. Performed fully analytical aerial triangulation (FAAT) for Penn DOT Bolivar Bridge - S.R. 0259, section 450 project. Also supervised photogrammetric stereo compilation of planimetric and digital terrain models for the purpose of producing topographic maps in metric at 1:500 scale, 0.25m contour interval.

EDUCATION (Degree, Year, Specialization)

MS, 1982, Geodetic Science (Photogrammetry , Geodesy & Cartography); B.S., 1973, Mathematics; Graduate Studies, 1979, Photogrammetric Data Processing Coursework, 1978, Photogrammetry

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 try to 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. **Senior Engineering Technician**	**11**	**12**	**2**

Brief Explanation of Responsibilities

Since joining the company in 2006, Mr. Smithson has been assigned to the surveying division and presently supervises field crews, the processing and calculating data for various projects, and the analysis of data obtained from field surveys to be applied to many aspects of civil engineering. Prior to coming to Baker, Mr. Smithson performed geotechnical analysis, civil design, environmental assignments and functioned as a survey party chief.

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.

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.

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.

Appalachian Electric Power Company – John Amos Power Plant, Winfield, West Virginia. As a Project Surveyor, Mr. Smithson was responsible for establishing horizontal and vertical control for construction layout activities which he also performed for the construction of the flue gas desulfurization (FGD) stacks.

Dominion Resources, Hastings, West Virginia. As a Project Environmental/Geotechnical Geologist, Mr. Smithson assisted the Licensed Remediation Specialist, and was responsible for subsurface investigation activities, in an alluvium aquifer type, to determine overburden and bedrock descriptions and groundwater flow analysis. He was directly responsible for the coordination of drilling and sampling activities associated with this project. Activities included delineation of contamination by subsurface drilling, soil sampling, groundwater sampling, sediment sampling, and surface water sampling.

CSX Hotels, Inc., d.b.a. The Greenbrier, White Sulphur Springs, West Virginia. As a project 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 Project 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.

EDUCATION (Degree, Year, Specialization)

B.S., 1999, Geology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Society of American Military Engineers **West Virginia Society of Professional Surveyors**	**Licensed Professional Surveyor, 2007, WV** **Certified Well Driller, 2002, 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:
Fogarty, Patrick, W., P.E., P.S. **Senior Engineer**	**13**	**23**	**17**

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:

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.

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.

WVU Tech Drainage Improvements, Montgomery. Wet mine seals of various portals, the installation of bat gates, open limestone channel design, culvert and structure design and reclamation grading of various locations near the college campus.

Water Study, Wyoming, Clay and Nicholas Counties. Coordination, oversight, staffing assignments, report preparation and cost estimating services for a water system studies for the City of Mullens in Wyoming County, and the Communities of Dille/Widen and Mill Creek in Nicholas and Clay Counties in West Virginia. The Phase I Study was conducted to determine the extent of degredation to the water source due to Pre-Law Mining Activity. A Phase II Study was also conducted to provide in-depth, site specific research of past and present mining activity, interviews with area residents, water sampling and testing, and the preparation of a cost estimate of potential waterline installation.

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.

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.

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, 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.

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

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers	**Professional Engineer, 1990, WV; Professional Surveyor, 1993, WV**
International Right of Way Association	**Professional Engineer, 1996, OH; Professional Surveyor, 1996, OH**
American Planning Association	**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:
Zang, Scott D., P.E. **Senior Engineer**	**11**	**11**	**-**

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.

Itman Refuse Pile Remediation, Itman, West Virginia. West Virginia Department of Environmental Protection. Engineer. Prepared construction specifications for remediation of a burning coal refuse pile.

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:
Ciucci, Ron J., P.E. **Senior Engineer**	-	-	**11**

Brief Explanation of Responsibilities

Mr. Ciucci is a senior engineer with experience in water and sanitary sewer systems, site development, hydrology and hydraulics, stormwater management, erosion and sedimentation control, and general municipal engineering. He also performed hydraulic/hydrologic analysis for several AML and AMD remediation projects.

ALCOSAN Service Area Wide Flow Monitoring Program. Allegheny County Sanitary Authority. Task Manager (1992-1998). Served as field coordinator and data processor for a flow monitoring program that measured sewage flow from 83 contributing municipalities. Major watersheds include Saw Mill Run; Turtle Creek; Chartiers Creek; Thompson Run; Beck's Run; Streets Run; Lowners Run; Jack's Run; Girty's Run; and Pine Creek. The goal of the program was to quantify sewage flow from ALCOSAN communities and reduce wet weather flows to the treatment plant.

ALCOSAN Deep Tunneling Flow Monitoring. Allegheny County Sanitary Authority. Task Manager (1994-1998). Responsible for site selection and equipment selection for monitoring of the Alcosan tunnel sewers which vary in depth from 40 to 120 feet deep. Monitoring equipment was installed in nine locations along the deep tunnel systems to measure level and flow within the system. This data was used to study storage capacity of the tunnels which is a requirement of the Nine Minimum Controls of CSO's.

Fox Chapel Pump Station and Rising Main, City of Pittsburgh, Pennsylvania. Pittsburgh Water and Sewer Authority. Project Engineer. Prepared pump and system curve data and supporting calculations.

Pittsburgh Water and Sewer Authority Pilot Plant, City of Pittsburgh, Pennsylvania. Pittsburgh Water and Sewer Authority. Project Engineer. Performed pump design/selection and prepared technical specifications.

Campus-wide Water Distribution System Evaluation, University Park, Pennsylvania. The Pennsylvania State University. Senior Engineer. Responsible for review of exiting information relating to the campus water distribution system, verification, calibration and analysis of the University's 1,000 pipe hydraulic model.

Potable Water Distribution System Evaluation, Weirton, West Virginia. Weirton Steel Corporation. Senior Engineer. Supervised modeling of the Weirton plant's water distribution system. The project included a comprehensive review of industrial water usage, existing plant mapping, model construction, model calibration via field testing, model simulations, alternate/upgrade analysis and final recommendations.

Hydraulic Model Calibration and System-wide Fire Flow Analysis, North Sewickley Township, Pennsylvania. The Municipal Authority of North Sewickley Township. Senior Engineer. Supervised model calibration and preparation of a Township-wide fire flow analysis. Baker performed a comprehensive hydrant testing program that included over twenty test locations. The project included recommendations to the Authority to bring their hydrants into compliance with AWWA standards.

Hydraulic Model and Maintenance, Various Locations throughout Beaver County, Pennsylvania. Borough of Baden, Center Township Water Authority, North and New Sewickley Townships, Beaver Falls Municipal Authority. Senior Engineer. Maintain and calibrate existing hydraulic model, some of which over 10,000 pipes in size.

EDUCATION (Degree, Year, Specialization)
B.S., 1992, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers **Society of American Military Engineers**	**Professional Engineer, 1998, Virginia** **Professional Engineer, 1998, Maryland** **Professional Engineer, 1997, West Virginia** **Professional Engineer, 1997, Ohio** **Professional Engineer, 1997, Pennsylvania**

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	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**	**2**	**3**	**32**

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 Treatment Plant Design, Berwind, West Virginia. West Virginia Division of Environmental Protection. Technical Review Manager. Performed technical reviews for preparation of construction documents for a 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.

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.

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, 1976Professional 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:
Stewart, Michele M., P.E. **Engineering Manager**	**9**	**11**	**-**

Brief Explanation of Responsibilities

Ms. Stewart is a Project Manager at Baker. Her specific project responsibilities have included project planning management, subcontract administration and coordination, engineering analysis, design, report preparation, and supervision and inspection of geotechnical construction activities. Ms. Stewart has also gained a significant amount of experience in the area of abandoned mine land reclamation and other mining related projects. Experience relevant to this project includes:

No. 8 Mine, Mine Drainage Evaluation, McDowell County, West Virginia. U.S. Steel Mining. Project Manager and Principal Investigator. Project involving the evaluation of treatment requirements and possible treatment alternatives for drainage emanating from an abandoned mine. Both direct and passive treatment alternatives were evaluated. Study results and recommendations, including conceptual designs, were summarized in a project report.

Numerous Abandoned Mine Land Projects, West Virginia and Pennsylvania. Office of Surface Mining and West Virginia Department of Natural Resources. Project Engineer. The types of problems encountered included mine subsidence damage, uncontrolled mine drainage, a mine fire and mining-related landslides. The scope of work for each project included investigation, engineering analysis, abatement design, and development of the construction contract documents (plans, specifications and engineer's cost estimate). Responsible for all phases of the project.

Shaft and Portal Site Design and Permitting Project, Waynesburg, Pennsylvania. Cyprus Cumberland Mine No. 6 Shaft. Project Manager. Provided engineering services needed for development of the site grading, surface water management, erosion/sedimentation control and ultimate site reclamation. The site work for this project included: a 1.6 mile access road over hilly terrain; a 1,000 foot long stream enclosure; a seven acre shaft and portal site; and a sedimentation pond and other erosion and sedimentation control structures. Responsibilities surrounding this project included planning/directing design and preparation of the project deliverables, client coordination and assisting the client with regulatory agency reviews.

Bleeder Shaft Site Design and Permitting Project, Waynesburg, Pennsylvania. Cyprus Cumberland Resources Corporation No. 2 Bleeder Shaft. Project Manager. Provided engineering services needed for development of the site grading plan, surface water management, erosion/sedimentation control plan, and ultimate site reclamation. Mine drainage is to be pumped from the No. 2 Bleeder Shaft site, therefore, the design for this facility included lined treatment ponds. Responsibilities surrounding this project included planning/directing design and preparation of facility construction documents and permit documents, client coordination, and assisting the client with regulatory agency reviews.

Shaft and Portal Site Design and Permitting Project, Waynesburg, Pennsylvania. Cyprus Emerald Resources Corporation No. 7 and No. 8 Shafts. Project Manager. Providing engineering services needed for development of the site grading plan, surface water management, erosion/sedimentation control plan, and ultimate site reclamation. Both site designs to provide for a bathhouse/portal facility, 300car parking area, and separate rock dust borehole site. Also, both sites have been designed to be developed in two phases. Mine drainage is to be pumped from the No. 8 Shaft site, therefore, the design for this facility includes a lined treatment pond. The No. 8 Shaft facility also includes wetland encroachments. Responsibilities surrounding these two shaft projects include planning/directing design and preparation of facility construction documents and permit documents, client coordination, assisting the client with regulatory agency reviews, and participating in township planning and zoning hearing board meetings to obtain a zoning variance.

EDUCATION (Degree, Year, Specialization)	
BS, 1975, Civil Engineering	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers	**Professional Engineer, 1980, 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		
Martin, Mark R., PG **Assistant Geologist I**	YEARS OF AML DESIGN EXPERIENCE: **10**	YEARS OF AML RELATED DESIGN EXPERIENCE: **8**	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: **-**

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.

Mine Drainage Subsurface Investigation, Clarksburg and Fairmont, West Virginia. West Virginia Department of Environmental Protection. 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.

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.

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:
Crowder, Joseph, L. **Surveyor**	**7**	**14**	**4**

Brief Explanation of Responsibilities

Since joining Baker, Mr. Crowder has been responsible for performing various duties including field surveying for the reclamation of abandoned mine lands and natural stream design, mine permitting, water feasibility studies, and municipal services.

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.

Water Well Sampling, DuPont, near Washington Works Plant, Wood County, WV. Assisted in gathering data from residents, locating potential sample points, such as old drilled water wells, cisterns, and springs. Assisted in actual water sampling using various methods - bailers, air pumps, etc.

Winfield ACF Site, ACF/U.S. Army Corps of Engineers, Winfield, WV. Work included Boundary, Topographic, Construction Layout, and Sample Point Layout of 15 acres along the Kanawha River. This project had over 12,000 sample points laid out on a 3' grid.

Poor Charlie, Riverside Site, Glasgow, WV; Poor Charlie, Sattes Site, Nitro, WV; Poor Charlie, Cramer Metals Site, Parkersburg, WV. Work included Boundary, Topographic, Location and Boring Stakeout of various VERA sites and adjoining properties.

Elkem Metals Disposal Facility, Elkem Metals, Alloy, WV. Work included Control Network, Boundary, Topographic Surveys, and yearly volume reports.

Solutia, Nitro, WV. Work included Boundary, Topographic and Location Surveys for various projects, disposal facility caps, charcoal filtering systems, and monitoring well control network throughout the site and adjoining properties.

Landfill Surveys, Various Locations, West Virginia. Work included Control Network, Boundary and Topographic Surveys for expansion of cells and yearly volume reports, Construction Layout and baseline stakeout for landfill closure. Locations included:

Nicholas County Landfill, Summersville, WV
Pocahontas County Landfill, Pocahontas County, WV
Fleming Landfill, WVDEP, Sissonville, WV
Cunard Landfill, WVDEP, Fayetteville, WV
Mingo County Landfill, Mingo County, WV
Mercer County Landfill, Mercer County, WV

Cogentrix Energy, Cogentrix, Marshall County, WV. Work included GPS control survey of project area, boundary survey of 292 acres, topographic survey of 177 acres for site construction, courthouse research. Survey Supervisor.

Big Sandy Peaker Plant, Constellation Power, Cabell County, WV. Work included GPS control survey of project area, boundary and topographic of 42 acres, boundary and route survey for 1 mile of transmission lines, construction stakeout. Crew Chief/Survey Supervisor.

Greenbrier Pipeline, Dominion, West Virginia, Virginia, and North Carolina. Work included control and preliminary route survey of a 264-mile pipeline running from Corton, West Virginia to Raleigh, North Carolina. Survey Supervisor.

EDUCATION (Degree, Year, Specialization)
A.S., 1989, Computer Aided Drafting

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
West Virginia Society of Professional Surveyors	**Professional Surveyor, 2000, 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:
Graham, Amber, A. **Environmental Specialist**	**6**	**6**	**-**

Brief Explanation of Responsibilities

Ms. Graham is an Environmental Specialist and Task Manager at Baker with a background in hydrogeology, acid mine drainage (generation, evolution, and treatment), reclamation of abandoned mine lands including acid mine drainage abatement, earthwork, stream channel restoration utilizing natural channel design techniques, and reclamation of coal refuse piles. She has experience with 3-D flow modeling (MODFLOW) and in-depth understanding of water chemistry. She 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. While at Baker, as well as during her previous experience, she has completed compensatory mitigation plans for various surface and underground coal mining operations utilizing natural stream design techniques. Both during her educational and professional career, she has worked on several abandoned mine land reclamation and stream restoration/enhancement projects, as well as the necessary permitting associated with those activities.

Kempton Refuse & AMD Project, West Virginia. West Virginia Department of Environmental Protection. Responsibilities included stream delineation and reporting, CWA 401 and 404 permit application completion, and design and production of a compensatory mitigation plan involving stream relocation/restoration and wetland enhancement/expansion in order to remediate water quality impacted by acidic mine drainage seeps. Stream mitigation designs used natural channel design techniques based upon reference to existing condition. Work performed by Baker for the West Virginia Division of Environmental Protection (WVDEP) under this contract on the Kempton Refuse and AMD project included performance of site reconnaissance and office research, field surveying, test drilling, analysis and design of reclamation measures, preparation of construction plans and specifications, and development of a quantity estimate and construction cost estimate.

Sycamore Refuse Reclamation Plan, West Virginia. Arch Coal, Inc. Prepared design and construction plan, profile, and cross-section sheets, which included regrading of refuse, placement of soil cover, and revegetation, and natural stream restoration and enhancement, which won the WVDEP Reclamation Award in 2002.

Tenmile Fork AMD Remediation Project, West Virginia. Arch Coal, Inc. Prepared design and construction plan, profile, and cross-section sheets, earthwork balancing, and complete bid package for the project which included retention cells and polishing wetland for AMD treatment, erosion and sedimentation control measures, site regrading, collection and diversion ditches, and associated natural stream channel restoration/enhancement design for immediate receiving waters.

Majestic Mine Post-Reclamation Assessment, Ohio. U.S. Forest Service and Ohio Department of Natural Resources, Division of Mines and Reclamation. (Masters Thesis) Performed field data collection/investigation (water sampling and measurements of flow), literature research, statistical review of data, including post-reclamation evaluation of AMD discharge reduction and evolution of water chemistry due to the reclamation, and proposed solutions for acid mine drainage problem at Majestic Mine, Athens County, Ohio, as well as within the Monday Creek watershed as a whole.

Bear Run Restoration, Ohio. U.S. Forest Service, Wayne National Forest. Assisted the Forest Hydrologist with data collection (stream and floodplain surveying, derivation of dimensionless ratios and parameters) and creation of restoration design utilizing natural stream design techniques which won a Regional Riparian Award within the agency.

EDUCATION (Degree, Year, Specialization)	
B.S., 1999, Environmental Geography **M.S., 2006, Environmental Geology/Hydrogeology**	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State) **Rosgen Stream Cert-Applied Fluvial Geomorphology/L-1, 2006** **Rosgen Stream Cert-River Morphology & Applications/L-2, 2006**

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:
Moses, Dana, E.I.T. **Mining Engineer**	-	6	-

Brief Explanation of Responsibilities

Mr. Moses is an Engineer-in-Training (EIT) and a Civil Associate at Baker. Mr. Moses has an extensive knowledge of all aspects of surface and underground mining. His experience includes design of ponds, roads, and other structures associated with mining projects, as well as completion of permit applications for mining operations (SMA, NPDES, etc.). Mr. Moses is also a Certified Floodplane Manager with extensive experience in hydraulics/hydrology, SWORA analysis, and natural stream design. Some of the specific projects he was involved in include:

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.

Numerous Mine Projects, West Virginia. Civil Associate. Provided engineering and permitting services needed for development of the site grading, surface water management, erosion/sedimentation control, and ultimate site reclamation. Permitting activities include SMA, 401, 402/NPDES, 404, and PLC permit application completion, including engineering design and environmental regulation compliance, and oversight through approval. Responsible for all phases of the project.

EDUCATION (Degree, Year, Specialization)	
B.S., 2002, Mechanical Engineering **M.B.A., 2004, Marshall University**	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Mechanical Engineers	**Engineer-in-Training, 2002, WV** **Underground Coal Miner Certificate, 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:
Chintala, Ramesh, S., P.E. **Hydraulic Engineer**	**0**	**16**	**1**

Brief Explanation of Responsibilities

Mr. Chintala's responsibilities include project management, technical oversight, and quality control for water resources projects. He is credentialed as a Diplomate, Water Resources Engineer, by the American Academy of Water Resources Engineers. Mr. Chintala is a registered professional civil engineer and certified floodplain manager with over 15 years experience in water resources engineering. Mr. Chintala's areas of expertise include watershed hydrology, river hydraulics, fluvial geomorphology, flood control, floodplain management, sedimentation engineering, erosion control, and stormwater management. His experience covers numerous studies involving steady, unsteady, and multi-dimensional numerical models of rivers using advanced geospatial techniques.

Drainage Manual, Charleston, West Virginia. West Virginia Department of Transportation, Division of Highways. Project Manager. Served as project manager in preparation of the West Virginia Department of Highways Drainage Manual. Also served as Principal Author. Baker prepared a revised Drainage Manual for the West Virginia Department of Highways. The manual was completely rewritten based on the AASHTO Model Drainage Manual.

USACE-Huntington District Contract, Various Cities, Kentucky. U.S. Army Corps of Engineers, Huntington District. Technical Advisor. Conducted independent technical reviews of analysis and reports. Baker prepared lake sedimentation reports for Dewey, Fishtrap, North Fork Kokosing, and Summerville Lakes. Project involved developing a digital terrain model of the lake bottom for current conditions, and overlaying it with a digital terrain model from previous conditions, and using GIS to determine the amount and distribution of sedimentation in the lakes.

Appalachian Corridor H, Section 6, E. Hardy County 220/8 to WV 55 Interchange, Moorefield, West Virginia. West Virginia Department of Transportation, Division of Highways. Project Manager. Prepared feasibility report addressing the preliminary design of a flood control levee and interior drainage facilities consisting of a pump station and flood control gates. Interior drainage pumping rates were determined with the TR-20 and HEC-IFH. Prepared comprehensive hydrology and hydraulics report for bridges. Also, prepared overflow channel design for Dumpling Run section of Corridor H. The overflow channel was designed to achieve no increase in the100-year water surface elevations due to the proposed highway project. Prepared stream stabilization design for the Fort Run section of Corridor H. This portion of the project included design of riprap protection, j-hooks, and cross vanes using natural stream design methods. Prepared hydraulic and scour studies on Corridor H, Section 6 bridges. Several bridges were analyzed: South Branch Bridge to US 220, Mainline and Connector Bridges over Dumpling Run and Fort Run Bridge. This project involved the study, design and final construction plan development for a new roadway beginning 0.6 miles southeast of Hardy County 220/8 and continuing eastward 6.6 miles to an interchange with WV 55. This project included an interchange with the Moorefield Bypass, a ramp connector road south of the corridor west from the possible future Moorefield Bypass to a proposed reconstruction of US 220, a closure study of the floodwall on the north end of Moorefield near this Section 6 proposed highway location, six bridges and completion of an interchange (two ramps) with WV 55 on the east end of the project.

West Virginia Hazard Mitigation Plan, Statewide, West Virginia. West Virginia Division of Homeland Security and Emergency Management. Project Manager. Responsible for examing hazards including floods, wildfires, structural fires, dam failures, drought, winter storms, landslides, hurricanes, wind, earthquakes, and man-made hazards. Plan was among the first FEMA approved State Plans in the United States. Baker developed a Standard State All-Hazards Mitigation Plan for the West Virginia Office of Emergency Services (WVOES) to comply with the requirements of the Disaster Mitigation Act of 2000 (DMA 2000). DMA 2000 is federal legislation under the Department of Homeland Security's Federal Emergency Management Agency (FEMA), which requires states to have State-adopted and FEMA-approved plan as a condition of disaster assistance.

WV Enhanced Hazard Mitigation Plan, Charleston, West Virginia. West Virginia Division of Homeland Security and Emergency Management. Project Manager. Provided project management, client contact, coordination, and oversight. Baker is preparing an Enhanced Hazard Mitigation plan for the state of West Virginia to comply with the requirements of the Disaster Mitigation Act of 2000 (DMA 2000) and 44 CFR 201-5.

EDUCATION (Degree, Year, Specialization)

B.E., 1991, Civil Engineering
M.S., 1996, Water Resources Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers	**Professional Engineer, CA, 2001**
Society of American Military Engineers	**Certified Floodplain Manager, WV, 2005**
International Erosion Control Association	**Diplomat, Water Resources Engineer, U.S., 2006**

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:
Rogers, Alison, M. **Senior Environmental Scientist**	-	5	-

Brief Explanation of Responsibilities

Ms. Rogers is a senior environmental specialist with over 10 years experience conducting natural resource assessments for a variety of transportation and resource extraction projects. She is a versatile professional with experience ranging from jurisdictional wetland and stream delineations to aquatic and terrestrial ecological surveys. In addition to her technical experience, Ms. Rogers has participated in the development and writing of EAs and EISs, ESA Section 7 biological assessments and formal consultation packages, and Clean Water Act Section 404/401 permit packages. As an experienced wetland ecologist, Ms. Rogers applies her aquatic biology background in wetland and stream studies. Ms. Rogers is proficient in wetland identification, delineation, functional assessment, monitoring, permitting and remote sensing. She is emerging in the creation and restoration arena for both wetlands and streams. Mr. Schroeder has already applied Level I Rosgen Training - Applied Fluvial Geomorphology in West Virginia.

Kempton Refuse and AMD Project CWA Section 404 Permit Application, Tucker County, West Virginia. West Virginia Department of Environmental Protection, Division of Land Restoration, Abandoned Mine Lands and Reclamation. Environmental Specialist. Conducted wetland and stream delineations, assisted with writing and production of wetland findings report and stream restoration and enhancement plan to support a Clean Water Act Section 404 Permit for an abandoned surface coal mine/refuse area reclamation project.

Shawnee Parkway CWA Section 404 Permit Application, Mercer and Raleigh Counties, West Virginia. West Virginia Department of Transportation, Division of Highways. Project Manager. Managed the post-ROD surface water delineation and assessment activities within an 18-mile, 300-foot project corridor; the development of a preliminary alignment to prepare an Individual Clean Water Act Section 404 Permit; and the development of a compensatory stream and wetland mitigation plan. Surface water resource data was warehoused in a geo-database that was used to develop the alignment, prepare the Clean Water Act Section 404 (b)(1) analysis, and to identify compensatory stream and wetland mitigation plan for inclusion in the Individual Clean Water Act Section 404 permit application for the project.

Surface Mine 44 Compensatory Stream Mitigation Plan, Boone and Lincoln Counties, West Virginia. Hobet Mining Company. Environmental Specialist. Conducted various existing stream condition assessments, stream-dwelling salamander surveys, functional assessments, and riparian habitat assessments on potentially impacted and proposed mitigation streams for a compensatory stream mitigation plan to support a Clean Water Act Section 404 permit for a large surface bituminous coal mine. Assisted with data analysis and preparation of compensatory mitigation plan.

Spring Branch Deep Mine CWA Section 404 Permit Application, Mingo County, West Virginia. Consolidation Coal Company/Laurel Run Mining Company. Environmental Specialist. Conducted and coordinated fieldwork including stream delineations, stream jurisdictional determinations, ephemeral/intermittent point determinations, habitat assessment evaluations, and benthic macroinvertebrate sampling of streams potentially impacted by a proposed deep bituminous coal mine. Prepared technical reports in support of Clean Water Act Section 401 and 404 permits for a deep bituminous coal mine.

Compensatory Stream Mitigation Plan, Hardy County, West Virginia. Town of Moorefield. Task Manager and Environmental Specialist. Identified potential stream mitigation sites, and assisted the client with agency meetings and correspondence. Prepared a Section 404(b)(1) analysis to document the mitigation site selection process, as well as the compensatory stream mitigation plan. The stream mitigation plan included an existing condition assessment of two degraded streams located in the South Branch of the Potomac River watershed and construction plans for the restoration of each stream. Assisted the contractor during mitigation project construction.

EDUCATION (Degree, Year, Specialization)

B.S., 1994, Biology
M.S., 1999, Biological Sciences

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Society for the Study of Amphibians and Reptiles (SSAR) **American Society of Mammalogists (ASM)** **Society of Wetland Scientists (SWS)**	**FHWA NEPA Training, 2006** **Rosgen Stream Cert-Applied Fluvial Geomorphology/L-1, 2002** **Rosgen Stream Cert-River Morphology & Applications/L-2, 2005** **Rosgen Stream Cert-River Assessment & Monitoring/L-3, 2006** **Rosgen Stream Cert-River Restoration & Natural Channel Design/L-4, 2006**

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

Various computer software and equipment (surveying and mapping) used by Michael Baker Jr., Inc. for ongoing projects in the Charleston, WV and Pittsburgh, PA area offices are as follows:

HYDROLOGY

SEDCAD4 – Storm Routing through Detention Structures, Channel Design and Riprap Sizing.
TR20 – Project Formulation – Hydrology by SCS
RT55 – Urban Hydrology for Small Watersheds by SCS
HAESTADS POND2 – Storm Routing through Detention Structures
HEC1 – Flood Hydrograph Package by U.S.A.C.O.E.
HAESTADS QTRSS – Urban Hydrology for Watersheds

HYDRAULICS – OPEN CHANNEL AND CULVERT

HEC RAS/ - River Analysis System/Flood Plain Analysis/Water Surface Profile
HEC2 – Water Surface Profiles by U.S.A.C.O.E.
HY8 – Culvert Analysis by FHWA
FLOWMASTER – Channel and Pipeline Hydraulics by HAESTAD, Inc.

PIPELINE HYDRAULICS

KYPIPE2 – Water Distribution System Modeling
CYBERNET – Water Distribution System Modeling

GEOTECHNICAL

STABL5M – Slope Stability
REAME – Slope Stability
SAMM – Loads on Concrete Pipe

DRAFTING AND SITE DESIGN

AutoCAD – LANDDEVELOPMENT 2000 Desktop for Earthwork, Survey, Quantity, Calculations,
Terrain Modeling, Coordinate Geometry, Site Grading, etc

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 4000SSE - Dual Frequency Receivers
Trimble 4400 - 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
Wild GRE 4
PENTAX SC5
Leitz SDR33
Topcon FC1

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

Survey Software
Leica Ski-Pro, Version 2.0
Leica GIS Data Pro Version 1.20
Innerspace Technology Version 6.0 Data Logging with Guidance
Leica Survey Office Version 1.33
Trimble GPSurvey Version 2.35
Trimble Pathfinder Office Version 2.11
Leica – Liscad 6.00
Wild Soft Version 1.65
MicroStation Version SE or J
Eagle Point Version 99Q3

PHOTOGRAMMETRIC EQUIPMENT AND SOFTWARE
First Order Stereoplotters
Wild Aviolyt BC2 Analytical Stereoplotter
Leica SD 2000 Analytical Stereoplotter (Jackson, Mississippi office)
Wild PUG-4 Point Transfer Devices

Softcopy Stereoplotters
Z/I ImageStation SSK, Xeon GXI 2000, 2-450 MHz (Mexico City, Mexico office)
Z/I ImageStation ZIII, Xeon GXI 2000, 2-450 MHz
Sun ULTRA 60 360 MHz Ultra Sparc with SOCET Set Suite of Software
Z/I ImageStation SSK, PIII Xeon, 2-1.0 GHz
Z/I ImageStation SSK, Intel® Xeon™ Processor, 1.80GHz, 512K Cache

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

Digital Orthophoto
Dell PIII Xeon, 2-1.0 GHz
Intergraph TDZ425
Intergraph 6887 ImageStation (Stereo Softcopy Capability)

Scanner
Z/I PhotoScan-TD (TDZ 310) Resolution setting of: 7, 14, 21, 28, 56, 112 and 224 microns

DVD Writer
Pioneer - Model #DVR-S201-DVD-R Drive with Pioneer Crosswriter Version 2.0 and Prassi DVD REP Version 2.0 Software

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

EDIT/DIGITIZING EQUIPMENT AND SOFTWARE
Workstations – Windows NT or Windows 2000
Pentium 4, 2 GHz
Pentium 2, 333 MHz
Pentium 2, 300 MHz
Pentium 2, 266 MHz
TDZ425
TD260MT

Scanners
ANA Tech Eagle 4050 – 500 dpi scanner
Hewlett Packard ScanJet 5100C

Plotters
JDL 3000 E
JDL 3500 E
Hewlett Packard 1055 CM
Hewlett Packard Design Jet 2500 CP-600 dpi

GIS Software
Intergraph – MGE/MGA, version 8 suite of products
MRF Mapping Tool Kit, version 8.0
ESRI: ARC/Info, version 8
ArcView, version 3.2
Arc View, version 3.1
AutoCAD, version 2000i
Oracle
Visual Basic, version 6
Visual Basic, version .NET

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
Kempton Refuse and AMD Project Tucker County, West Virginia	West Virginia Department of Environmental Protection (DEP) Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	Site reconnaissance, survey and mapping, subsurface investigation, designing grading, drainage control structures, ditches, passive treatment for AMD, earthwork, preparation of plans, specifications and costs.	$189,414 (Fee)	90%
Borgman Refuse & Portals – AML Reclamation Preston County, West Virginia	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 10 McJunkin Road Nitro, West Virginia 25143	Site reconnaissance, surveying, subsurface investigation, designing grading, drainage control structures, ditches, passive treatment for AMD, earthwork, preparation of plans, specifications and costs.	$107,500 (Fee)	75% (On Hold per WVDEP)
Mineral Zoar Road AMD Remediation Project Tuscarawas County, Ohio	ODNR-Division of Mineral Resources Management 1855 Fountain Square Court, Bldg H-2 Columbus, OH 43224	Site reconnaissance, aerial photography & mapping, identifying AMD sources and sampling, channel restoration and AMD remediation design (passive system), drainage control design, preparation of plans, specifications and cost estimates.	$78,500 (Fee)	95%
Huff Run 42 – AMD Remediation Study Carroll County, Ohio	ODNR-Division of Mineral Resources Management 1855 Fountain Square Court, Bldg H-2 Columbus, OH 43224	Site reconnaissance, subsurface investigation, AMD source identification, sampling, AMD treatment alternatives design, surface drainage design, cost estimating for alternatives, providing recommendations and report.	$58,600 (Fee)	90%
Harsha South AMD Preliminary Investigation Project Carroll County, Ohio	ODNR-Division of Mineral Resources Management 1855 Fountain Square Court, Bldg H-2 Columbus, OH 43224	Detailed site reconnaissance, subsurface investigations to identify AMD source(s), evaluation and characterization of AMD source(s), conceptual design and evaluation of possible AMD abatement alternatives, preparation of report and recommendation and preliminary design.	$61,604 (Fee)	55%

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
Program Management/General Engineering Consultant Pennsylvania Turnpike Commission (34 consecutive years) Throughout Pennsylvania	Pennsylvania Turnpike Commission Harrisburg, Pennsylvania	Annual Inspection and reports on Turnpike conditions, recommendations on maintenance and improvements to system, review of Design work by Commission's engineering staff and assistance to Commission staff in review of proposals from outside design consultants	$4,000,000 (2004 Contract)	Ongoing
Buckeye Reclamation Landfill CERCLA Site, Remediation Design and Construction Management Belmont County, Ohio	CONSOL Energy, Inc. 1800 Washington Road Pittsburgh, PA 15241	Site reconnaissance, Phase I Remedial Action design involving regrading over 85 acres, construction of a solid waste landfill cap, installation of groundwater/leachate collection system, relocation and lining (geosynthetic clay liner underlying fabricform) of over 1 mile of an existing stream and impoundment elimination by solidifying over 35000 cubic yards of sediments. Baker prepared final construction drawings, specifications and quality assurance plans. Baker also provided construction management services.	$1,400,000 (Fee)	97%
TOTAL NUMBER OF PROJECTS: **7**		TOTAL ESTIMATED CONSTRUCTION COSTS: **$5,895,618**		

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-CONSULTANT TO OTHERS					
PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
N/A					

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)
Water System Modeling Beaver Falls, PA	Beaver Falls Municipal Authority 1425 Eighth Avenue Beaver Falls, PA 15010	$48,234 (Fee)	2007	Completed
Veteran's Bridge Water Line Crossing Beaver County, PA	Beaver Falls Municipal Authority 1425 Eighth Avenue Beaver Falls, PA 15010	$600,000	2007	Yes
Whetstone Road Water Line Crossing Fairfax, VA	Fairfax Water 8560 Arlington Boulevard Fairfax, Virginia 22031	$28,712 (Fee)	2006	Yes
Sprucedale Drive Water Main Replacement Fairfax, VA	Fairfax Water 8560 Arlington Boulevard Fairfax, Virginia 22031	$9,531 (Fee)	2006	Yes
Terry Lynn Court Water Main Replacement Fairfax, VA	Fairfax Water 8560 Arlington Boulevard Fairfax, Virginia 22031	$9,531 (Fee)	2006	Yes
Eastvale Water Treatment Plant – Clearwell Beaver Falls, VA	Beaver Falls Municipal Authority 1425 Eighth Avenue Beaver Falls, PA 15010	$87,375 (Fee)	2006	Yes
TCCP Potable Water System Improvements New Sewickley, PA	New Sewickley Township Municipal Authority 233 Miller Road Rochester, PA 25074-2759	$800,000	2006	Yes
Lower Campus City Water Distribution System Slippery Rock, PA	Slippery Rock University Maintenance Center Slippery Rock, PA 16057	$66,612 (Fee)	2005	Yes

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)
36-Inch Raw Water Mains Norfolk, VA	City of Norfolk Department of Public Works Norfolk, VA 23501	$1,100,000	2005	Yes
Mineral Zoar Road – AMD Remediation Project Tuscarawas County, OH	ODNR – Division of Mineral Resources Management 1855 Fountain Square Court, Bldg. H-2 Columbus, OH 43224	$69,626 (Fee)	2005	Yes
Municipal Engineering Services Monaca, Beaver County, PA	Burough of Monaca 928 Pennsylvania Avenue Monaca, PA 15061	$132,749	2005	Yes
Beech Bottom Refuse – AML Reclamation Ohio and Brook Counties, West Virginia	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	$98,000 (Fee)	2004	Yes
Terra-Alta Water Works Waterline Feasibility Study Preston County, WV	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	$40,829	2004	Completed
Water Replacement Projects 2003 Virginia	Virginia American Water Company 2223 Duke Street Box 25405 Alexandria, VA 232314	$55,299 (Fee)	2004	Yes
Huff Run 42 – AMD Remediation Study Carroll County, OH	ODNR – Division of Mineral Resources Management 1855 Fountain Square Court, Bldg. H-2 Columbus, OH 43224	$58,600 (Fee)	2004	Completed
Mt. Eaton Subsidence Evaluation Wayne County, OH	ODNR – Division of Mineral Resources Management 1855 Fountain Square Court, Bldg. H-2 Columbus, OH 43224	$24,400 (Fee)	2004	Completed
Fox Chapel Pump Station and Rising Main Pittsburgh, PA	Pittsburgh Water & Sewer Authority 441 Smithfield Street Pittsburgh, PA 15222	$295,000 (Fee)	2003	Yes

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)
Water Main Design & Relocation Engineering Services Virginia	Virginia American Water Company 2223 Duke Street Box 25405 Alexandria, VA 232314	$102,920 (Fee)	2002	Yes
Flemington Portals and Drainage No. 2 – AML, Reclamation Taylor County, WV	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 10 McJunkin Road Nitro, West Virginia 25143	$42,000 (Fee)	2002	Yes
National Mine Complex – AML Reclamation Monongalia County, WV	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 10 McJunkin Road Nitro, West Virginia 25143	$72,800 (Fee)	2002	Yes
Mineral City Park AMD Remediation Project Tuscarawas County, OH	ODNR-Division of Mineral Resources Management 1855 Fountain Square Court, Bldg H-2 Columbus, OH 43224	$73,000 (Fee)	2002	Yes
Columbia Portland AML Reclamation Project Muskingum County, OH	ODNR-Division of Mineral Resources Management 1855 Fountain Square Court, Bldg H-2 Columbus, OH 43224	$66,000 (Fee)	2002	Yes
Lindentree Acid Mine Drainage Remediation Project Carroll County, OH	ODNR-Division of Mineral Resources Management 1855 Fountain Square Court, Bldg H-2 Columbus, OH 43224	$68,000 (Fee)	2002	Yes
Barberton Subsidence Evaluation Summit County, OH	ODNR-Division of Mineral Resources Management 1855 Fountain Square Court, Bldg H-2 Columbus, OH 43224	$37,000 (Fee)	2002	Completed
HARSHA Aerial Mapping – AMD Remediation Carroll County, OH	ODNR-Division of Mineral Resources Management 1855 Fountain Square Court, Bldg H-2 Columbus, OH 43224	$14,000 (Fee)	2002	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
North Fork Yellow Creek, Ecosystem Restoration Project Hammondsville, Ohio	US Army Corps of Engineers, Pittsburgh District	$56,000 (Fee)	2002	Project Completed	David Miller & Associates Vienna, Virginia
Feasibility Study for Ecosystem Restoration for Jones, Straigt, Reeds and Cox Creek Sub-basins Lee County, Virginia	David Miller & Associates Vienna, Virginia	$93,873 (Fee)	2004	Project Completed	David Miller & Associates Vienna, Virginia

19. ADDITIONAL INFORMATION OR DESCRIPTIVE RESOURCES SUPPORTING BAKER'S ABILITIES TO PERFORM WORK FOR THE WEST VIRGINIA ABANDONED MINE LANDS PROGRAM

Baker has been providing engineering services for abandoned mine lands (AML) reclamation and acid mine drainage (AMD) remediation since the federal government first enacted legislation. Our work experience in these areas 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. To date, we have completed over 250 AML projects ranging from subsidence control, mine sealing, AMD/AML site drainage/grading improvements, refuse reclamation, landslide correction, waterline extension for areas affected by AML problems to mitigation of acid mine drainage problems and watershed stream restoration. 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 Item 12 (Table 12-1) of the Consultant Confidential Qualification Questionnaire (CCQQ) and the "AML and Related Project Experience Matrix" following this CCQQ clearly shows Baker's surveying and mapping, subsurface investigation, hazardous waste disposal, landslide correction, waterline extension feasibility design and construction phase services, as well as abandoned mine lands reclamation and AMD pollution abatement experience, they only hint at the extensive human and material resources which especially qualify our firm for abandoned mine lands reclamation projects. The following narrative discussions and detailed project descriptions further describe our experience and provide an insight into the special capabilities of Michael Baker Jr., Inc.

COMPREHENSIVE SERVICES

The civil and mining engineering, surveying and mapping, environmental, and geotechnical services of Michael Baker Jr., Inc. are available to immediately respond to the mining reclamation needs of WVDEP. Working from our Charleston, West Virginia office, with support from our Pennsylvania offices, Baker can provide the full spectrum of services needed in 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 Acquisition And Interpretation
- Hydrology and Hydraulics Studies
- Geotechnical Engineering
- Natural Stream Restoration
- Engineering Design
- Plan/Specifications Preparation
- Construction Phase Services (Oversight and 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 interactive graphics and AutoCAD compatible design software to perform computer-assisted mapping, design and drafting. Baker is a pioneer in mining applications of interactive graphics and is one of only a few firms capable of digitizing mapping directly from aerial photography using photogrammetric stereoplotters. When mapping already exists, we can manually digitize the information into the computer system. Some of the functions applicable to abandoned mine land design studies for which Baker routinely employs the Interactive Graphics System and AutoCAD LAND DEVELOPMENT DESKTOP civil design software include:

- Contour Mapping of the Surface And Subsurface
- Generation of Geologic Cross Sections and Fence Diagrams
- Facilities Layout and Site Design
- Rail And Roadway Design
- Water Distribution System Design
- Earthwork Volume Computations and Cost Estimates
- Drafting Of Plans, Profiles, and Cross Sections

The Interactive Graphics System and AutoCAD LAND DEVELOPMENT DESKTOP Civil Design software are powerful cost saving tools for abandoned mine land and acid mine drainage abatement projects since they can evaluate numerous configurations rapidly. They are especially useful for projects requiring bench backfilling and grading, the regrading of refuse banks and gob piles, elimination of highwalls, and reclamation of other abandoned surface disturbances.

ACID MINE DRAINAGE REMEDIATION, ABANDONED MINE LANDS RESTORATION, AND EXISTING MINES EXPERIENCE

The projects described under Item 12 of the CCQQ and the attached list of AML projects concern primarily abandoned mine land reclamation and acid mine drainage remediation. However, the experience of the key project personnel is not limited to abandoned mine operations, since we continually serve many of the country's largest coal and mineral producers as well as industrial clients. Those personnel listed under Item 13 of the CCQQ have experience in all phases of mining services, from survey, mapping, exploration and reserve analysis through mine planning, permitting, design, construction management, and final closure and reclamation. Since mining projects comprise a large segment of our business, we work to assure that the mining services provided meet the needs and expectations of our clients and any regulatory agencies involved. Some of the many coal producers we have served are listed below:

- U.S. Steel Mining Co., Inc.
- Westmoreland Coal Company
- RAG Emerald Resources Corp.
- AMAX Coal Company
- Consolidation Coal Company
- RAG Cumberland Resources Corp.
- Jim Walter Resources, Inc.
- Ashland Coal, Inc.
- Sierra Coal Company
- Exxon Research and Engineering Co
- Arch Coal, Inc.
- Magnum Coal Company
- CONSOL Energy
- Massey Energy
- Coal River Energy, Inc.
- Mid Vol Coal Sales, Inc.
- West Virginia Coal Association

Since it is not possible to describe all of the work done for these mining clients and numerous governmental agencies, only six detailed project descriptions will be provided. These key projects, due to their magnitude and/or requirements, further demonstrate the full service capabilities of Michael Baker Jr., Inc. These projects are listed under the type of work performed.

- ***State Funded Mine Reclamation and Pollution Abatement – Ohio***

The Village of Barton was plagued by mine drainage and slope instability (creating landslides) problems resulting from abandoned underground mines with acid mine drainage discharges and a gob pile. Baker was retained to investigate these problems and prepare preliminary and final engineering plans for their abatement. The sources of mine drainage were identified through a water quality sampling program, field reconnaissance, and a test boring program. Infrared aerial photography was utilized to identify acid mine drainage seepage zones. A test boring program was conducted to determine the depth and dip of the mined out coal seam, the mine pool level and its piezometric head, and the lithologies of the overburden.

A second test boring program was conducted in the gob pile to determine pile thickness and to obtain gob and soil samples for soil mechanics testing and evaluation for use as construction material and coal recovery. Stability analyses were conducted on cross sections of the pile.

A third element of the investigation was a flood study of Steep Run. Two problems were evaluated: alteration of the hydrologic characteristics of the watershed through mining activity, and reduced channel capacity resulting from erosion of refuse piles and unstabilized mined areas. Hydrological frequency curves were estimated for pre and post mining conditions using the SCS Method (Technical Release No. 55). Stream siltation was observed in the field, upstream and downstream on the mined area.

A preliminary engineering report was prepared, addressing the following items.

- evaluation of alternative AMD abatement measures, including practicability of mine seals and drainage of the mine void
- geotechnical investigation and stability analysis for saturated hillside slope
- feasibility of re-grading and reclaiming the gob pile
- corrective measures for the hillside slope failure (landslide)
- feasibility of reprocessing refuse material for secondary recovery of coal of sufficient heating value
- suitability of refuse from the gob pile for use as construction material
- cost estimates for all technically feasible alternatives for AMD abatement, hillside slope stability and gob pile reclamation or use, and
- preparation of final construction drawings, specifications and cost estimate for this project.

- ***Waterline Extension Feasibility Study and Design for 9 County Route Roads in Areas of Preston County impacted by AML Problems – West Virginia***

The project was assigned to Baker by WVDEP Office of AML & R as two separate projects. The first project was to perform waterline extension feasibility study, the object of which was to investigate the areas' water supply, determine whether and how the water supply has been impacted by pre-law mining, and to compile and document the investigation findings to support an AML&R grant request to OSM for funding to extend and/or install potable water supply systems in the impacted areas. The second project was to perform design of the water supply system extension to the impacted areas. The object of this water supply extension was to provide potable water to residents in areas with ground-water supply that was found to be contaminated by pre-law mining activities.

Baker's services for the waterline extension feasibility study included:

- Site reconnaissance noting existing conditions and identifying problem areas.
- Reviewing regional and local geology and groundwater hydrology of the primary river basin and its tributaries.
- Field tests of residents' supplies and surface water for pH, iron, specific conductivity, temperature and flow to determine the areas with the worst water quality, and preliminary interviews with a representative sample of residents using private sources.
- Review of mining within the study area to determine the extent and age of past and current mining.
- Preparation of a preliminary report discussing whether or not to proceed with a compilation of supporting information and documentation.
- Extensive interviews with local, state, and federal officials regarding water quality and with residents and local businesses.
- Laboratory testing for several parameters which can be used to determine if mining has affected the water.
- Complete mining history study of the area to determine the sources of water quality problems, and comparison of pre-law and post-law mining history. In depth geologic and hydrologic studies were also performed.
- Use information gathered to determine the relationship of Abandoned Mine Lands to the water quality, then examine and present possible solutions and cost estimates.
- Extension of an existing public water system was determined to be the best alternative; therefore an estimated layout and cost estimate were developed.
- Prepare the final report which includes the following: a write-up of all information gathered, conclusions drawn and recommendations; maps showing the study area, where samples and interviews were taken, regional groundwater flow, and mined out areas (both pre-law and post-law); typical geologic formation cross-sections showing existing water sources and AML-affected coal seams; typical cross-sections of the groundwater model; and photographic documentation of the water quality problem source(s) and effects.

The second project involving design of waterline extension consisted of extension of two separate water supply distribution systems both of which are owned and operated by Preston County PSD No. 2. In order to serve the impacted areas it was necessary to increase the capacity of the existing systems. The final system was designed to provide 500 gpm fire flow at 20 psi residual at all points in the system during normal system conditions. Mainline and service line pressure reducing valves were required due to elevation variations of over 500 feet within the project area.

The proposed upgrade of the existing systems included interconnection of the two existing systems, replacement of key sections of undersized 4" PVC, and the replacement of three inefficient underground pump stations with a single new above ground pump station. The proposed pump station will supply water to the entire system and will fill three water standpipes at two remote locations. The lower intermediate tank being controlled by an altitude valve and the higher more remote tank controlling pump operation via telemetry. Waterline extensions totaling 90,000 LF of 8", 6", 4", and 2" PVC and ductile iron pipe, a new 50 HP pump station, 120 new service connections and meters, and all related appurtenances.

Baker's services for this project included:

- Exploratory drilling and inspection to determine extent of rock excavation
- Hydraulic design and modeling utilizing KYPIPE
- Layout of waterline plan and profile
- Pump sizing and station selection
- Evaluate mainline and service line pressure reducing valve requirements
- Preparation of construction plans and technical specifications
- Obtain permit approval from WV Office of Environmental Health Services
- Obtain permit approval from the WV Public Land Corporation
- Obtain verbal permit approval from the WV Dept. of Highways
- Obtain Nationwide permit from the US Army Corps of Engineers
- Provide submittals to WV Public Service Commission
- Provide submittals to Small Cities Block Grant Foundation
- Construction cost and quantity estimate
- Representation at prebid and preconstruction meetings
- Construction monitoring on request

- ***Passive Treatment of Acid Mine Drainage***

Baker designed the WVDEP's first passive treatment system in conjunction with the Webster Refuse Reclamation Project in 1984. Since then we have designed several passive treatment systems, including:

- Alkaline Leach Beds, basic steel slag leach beds
- SAP cells, reverse alkaline producing systems (RAPS) cells
- Open limestone channels
- Anoxic limestone trenches
- Aerobic and anerobic wetlands
- Soil amendment

These technologies were variously incorporated into such projects as:

- Kempton Refuse & AMD Project for WVDEP
- Mineral-Zoar Road AMD Reclamation Project for ODNR-DMRM
- Lindentree Reclamation project for ODNR-DMRM
- Mineral City Park Reclamation project for ODNR-DMRM
- Powel River Ecosystem Restoration and Ely and Puckett Creek Subbasins for the Nashville District, U.S. Army Corps of Engineers
- The Emoryville Mine Complex and Piney7 Swamp Run for the WVDEP
- North Branch Potomac River for the Baltimore District, U.S. Army Corps of Engineers
- State Route 800 / Dennison Reclamation Project for the ODNR

- ***Reclamation Practices for Enhanced Wildlife Values***

This study was undertaken to define the best technologies available to protect and enhance wildlife values in surface mining and reclamation. The Baker project team examined both surface mining techniques and mined land restoration procedures.

After developing a preliminary list of management practices through literature review and contact with technical specialists, the applicability of those practices to surface mines in Northern Appalachia was evaluated. Many of the 100 management practices deemed potentially feasible were observed in the field, resulting in the identification of 60 – 70 viable management practices. Field investigations of reclamation techniques were undertaken at mines in eastern and central Kentucky, northcentral Tennessee, southwestern Virginia, West Virginia and Pennsylvania.

Findings of the study were assembled into a user's manual for use by coal operators, agency personnel, wildlife biologists, and others involved in the reclamation of mined lands. Each wildlife protection and enhancement technology is described in the user's manual; and procedures for implementation are given. Information on costs and performance of each management practice under various conditions is also provided.

Following completion of that study, the U.S. Fish and Wildlife Service awarded Baker a second contract to investigate mine related stream alterations. This study has as its objectives the definition of the best methods of performing stream channel relocations while protecting and enhancing aquatic habitat. Following an exhaustive literature review and contact with technical specialists, field studies of channel relocations in the eastern, central and western coal provinces were conducted. Field studies focused on the effectiveness of habitat improvement structures and their relationship to hydraulic capacity.

A handbook describing aquatic habitat protection and improvement methods; their applications and costs was completed by the Baker project team.

- ***Powell River Ecosystem Restoration - Ely and Puckett Creek Sub-basins, Virginia***

As a sub-consultant to David Miller and Associates, Inc. working for the Nashville District, U.S. Army Corps of Engineers, Baker completed a feasibility study and design to restore the ecosystem of Ely and Puckett Creeks by providing passive AMD treatment systems which would improve the water quality of the creeks to sustain aquatic lives and habitat. The project included four abandoned mine sites with AMD discharging mine entries and very poorly vegetated steep coal refuse piles. The AMD discharges from these sites severely impacted the receiving streams (Ely and Puckett creeks).

The reclamation plans developed by Baker provided for the refuse piles to be regraded and covered with soil amendment to reduce AMD generation. The reclamation plans also provided for off-site runoff to be diverted around the sites and construction of mine seals and limestone collection ditches for controlling the AMD seepage. Restoration and relocation of existing tributary streams was required at three of the sites. The proposed treatment systems at each site generally consisted of a mine water collection systems discharging into settling ponds, followed by Successive Alkalinity Producing Systems (SAPS cells) and aerobic wetlands as needed to fully neutralize AMD from each site at design flows prior to discharging the treated water into the stream.

Baker's services for this project included:

- field review for site characterization and identifying AMD sources
- review of mining and site histories and existing AMD flow data and chemistry
- evaluation of AMD abatement alternatives
- submittal of conceptual plan
- exploratory drilling and inspection
- soil and refuse testing
- hazardous, toxic, and radiological waste (HTRW) investigations
- review additional AMD sampling and test data
- stream channel restoration design
- hydraulic design of culverts, collection and diversion ditches
- open limestone channel design for passive AMD treatment
- SAPS cell design for passive AMD treatment
- aerobic wetland design for passive AMD treatment
- site grading layout and revegetation plan
- preparation of feasibility level design plans and details
- preparation of construction specifications & bid documents
- detailed cost and quantity estimate with MCACES software

- ***Full Range of Mining Services for a Coal Preparation Plant***

This design and permitting project for Sierra Coal Company's Kentucky Skyline Preparation Plant demonstrates the full range of services provided by Michael Baker Jr., Inc. Concurrently with engineering and geotechnical feasibility studies, Baker environmental personnel conducted vegetation, land use, surface water, groundwater and noise investigations. Following site selection, Baker provided all surveying, geotechnical, environmental and civil engineering services for design, permitting and construction for a one million tons per year coal preparation plant and related facilities in Breathitt County, Kentucky. The development consisted of the following facilities:

- preparation plant and appurtenant structures (conveyors, dump bins, thickener, etc.)
- coarse coal refuse disposal area
- fine refuse slurry impoundment
- hollow fill for disposal of excess cut material
- topsoil storage areas
- access and haul roads
- sedimentation ponds and surface drainage controls (diversion ditches, collection channels, etc.)

A geotechnical drilling and testing program was undertaken to provide data for foundation analyses; stability of haul roads and cut and fill slopes; and stability of embankments, the hollow fill, and coarse refuse pile. Civil engineering services included all hydrologic analyses and hydraulic design and earthwork and grading. Hydrologic and hydraulic analyses were conducted to size drainage control structures and for design of the slurry impoundment. The design effort included temporary revegetation plans, as well as reclamation plans for regrading the site to approximate original contour and revegetation plans for returning the site to forest land while enhancing wildlife.

The design effort was followed by detailed drawings and specifications for construction. Baker also provided construction inspection services. A team of two civil engineers and a geotechnical engineer was assigned to the site for the duration of construction (approximately 18 months). These individuals monitored the contractor's adherence to specifications for foundation preparation (structures and embankments), construction materials, excavation and grading, compaction, and soil erosion and sedimentation control (including revegetation plans). Based on our construction inspection, as-built plans were prepared to accompany the permit application prepared under Kentucky's Permanent Regulatory Program.

IN-HOUSE FACILITIES AND RESOURCES

As a large, diverse engineering firm, Michael Baker Jr., Inc. has facilities available to properly conduct 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

SUMMARY

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

1. **Baker's 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 5 years. Projects listed under item 12 of the CCQQ describes typical of various AML 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 AML reclamation and AMD remediation; 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 "AML and Related Project Experience Matrix" following this CCQQ shows various AML and hazardous waste disposal projects performed for various state agencies and industrial clients and also show primary participants responsible for these projects.

2. **Qualification of Personnel** with respect to background, general experience, and experience relative to the requirements of the **Reynoldsville Refuse Design** project.
   - Baker's key personnel are registered professional engineers experienced in a broad variety of AML and similar projects, as indicated item 13 of the CCQQ.
   - Our Project Manager and Project Engineers are veterans of many AML projects, including assignments from WVDEP since 1983.

3. **Corporate Specialized Experience and Demonstrated Abilities** with AML problems and similar projects.
   - Baker's specialized experience with AML problems is summarized for 30 typical projects (see "Table 12-1 in Item 12 of the CCQQ"). Our work has addressed the full spectrum of AML problems for clients such as WVDEP, PADEP and ODNR.
   - The firm has a wealth of experience on similar projects, as evidenced by projects performed for mining and mineral companies. Moreover, Baker's transportation, site development, and water resource projects in the tri-state area typically address AML problems.

4. **Management Plan and Location of Facilities.**

   Baker's Management Plan provides for:
   - Project Management and Organization – Leadership by an experienced Project Manager, Project Engineers, and Technical Quality Control staff; organization capable of performing multiple projects simultaneously.
   - Technical Approach – Knowledge of the sequencing and scheduling for typical tasks performed for AML projects.
   - Contract Administration and Control – Computerized budgeting and scheduling; regular progress reporting; total quality management.
   - Location of Facilities – Design work performed in Baker's Charleston, WV office with assistance from our Beaver, PA office. Baker has a long list of successfully completed AML assignments for WVDEP from our locations in Pennsylvania since WVDEP initiated the AML reclamation program. We feel that the recent addition of AML experienced staff in our Charleston facility will only enhance our ability to serve the WVDEP.

19. ADDITIONAL INFORMATION OR DESCRIPTIVE RESOURCES SUPPORTING BAKER'S ABILITIES TO PERFORM WORK FOR THE WEST VIRGINIA ABANDONED MINE LANDS PROGRAM

5. **Continuous Improvement (CI)**

Baker has a highly effective, corporate-wide Continuous Improvement (CI) program. The ultimate beneficiaries of CI are Baker's clients, such as the WVDEP. Benefits include improved client satisfaction, a reliable product/service, reduced costs, improved communications and added value.

Client satisfaction; service, reliability, and value will be the overriding responsibility of the project's technical quality manager, and the goal of the entire project team. A variety of formal and informal techniques will be used throughout the project life to monitor our success. These techniques will range from visits and phone calls to status meetings and quality audits. If any deficiencies are identified, corrective actions will be implemented by the management team.

Based on Baker's extensive AML experience, our veteran staff, our familiarity with WVDEP AML assignments, and the strength and location of our facilities, we believe that Baker is best qualified to assist WVDEP in improving its abandoned mine lands.

20. THE FOREGOING IS A STATEMENT OF FACTS

Signature: Russell E. Hall

Title: Assistant Vice President

Date: May 18, 2010

Printed Name: Russell E. Hall, P.E., P.S.

NOTE: THIS DOCUMENT WILL BECOME VOID AFTER DECEMBER 31 IN CALENDAR YEAR OF DATE HEREON.

RFQ No. DEP14992

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 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. Hull Date: **May 18, 2010**

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 18th day of May, 2010

My Commission expires April 14, 2013.

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