



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

Solicitation

NUMBER	PAGE
DEP16434	1
ADDRESS CORRESPONDENCE TO ATTENTION OF:	
FRANK WHITTAKER 304-558-2316	

RFQ COPY
TYPE NAME/ADDRESS HERE
Michael Baker Jr., Inc.
4301 Dutch Ridge Road
Beaver, PA 15009

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

DATE PRINTED
12/10/2013

BID OPENING DATE: 01/14/2014 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-29		
				CANYON REFUSE & DUMP	DESIGN	
				EXPRESSION OF INTEREST		
				THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING EXPRESSIONS OF INTEREST FOR PROFESSIONAL ENGINEERING DESIGN SERVICES AND CONSTRUCTION MONITORING SERVICES AT THE CANYON REFUSE AND DUMP, MONONGALIA COUNTY, WEST VIRGINIA PER THE FOLLOWING BID REQUIREMENTS AND ATTACHED SPECIFICATIONS.		
				***** THIS IS THE END OF RFQ DEP16434 ***** TOTAL:		
				01/14/14 09:50:58AM West Virginia Purchasing Division		

SIGNATURE CRD -	Chad R. Davis, PE	TELEPHONE 412.375.3077	DATE January 10, 2014
TITLE Assistant Vice President	FEIN 25-1228638	ADDRESS CHANGES TO BE NOTED ABOVE	

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

The Baker logo consists of the word "Baker" in a white, sans-serif font, set against a dark gray rectangular background.

Michael Baker Jr., Inc.
4301 Dutch Ridge Road
Beaver, PA 15009

January 13, 2014

724.495.7711
FAX 724.495.4112

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

Attention: Mr. Frank Whittaker

Re: Expression of Interest for Professional Engineering
Design Services and Construction Monitoring Services at the
Canyon Refuse & Dump, Monongalia County, WV
RFQ Number DEP16434

Dear Mr. Whittaker:

Baker is honored to have built an over 30-year relationship with the West Virginia Department of Environmental Protection (WVDEP), helping to solve complex mining and environmental challenges. Since 1983, we have worked successfully together on more than 40 projects, and **have received local and national recognition** for those efforts. At Baker, we don't take the past for granted, but rather look forward to opportunities to enhance the services we offer to WVDEP. Baker will provide our dedicated team of experienced personnel who have previously performed similar assignments for the WVDEP for this project. This dedicated team has also provided engineering services for numerous abandoned mine land reclamation and related projects over the years for a variety of clients as reflected in the attached documents.

A key differentiator of the Baker Team is our ability to provide WVDEP direct access to **Mr. Charles D. Stover**, the former Design Administrator of the WVDEP AML/AMD Department. His long standing history with the AML program will add valuable technical insight to our team and we are excited to offer Charlie as part of our services to WVDEP. Charlie's involvement on the Baker Team will **assure WVDEP that an effective and cost efficient project solution** is implemented. Since joining Baker, Charlie has provided valued technical input into our AML projects and specifically provided quality reviews of our project progress submission to the Department.

Baker's staff is experienced in all aspects of AML/AMD projects and has technical expertise in dealing with any technical need that may be encountered. 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. Baker's experience combined with Mr. Stover's specific knowledge and expertise results in a team that can provide WVDEP exceptional value. **Furthermore, our dedicated team will be 100% committed to AML work and will not be working on oil and gas assignments in West Virginia.**

Baker has proven to WVDEP our ability to manage multiple projects without a reduction to the level of quality and service. Baker is a "One Stop Shop" for any services that may be needed for this project which not only helps reduce costs, but also provides faster response, reduced coordination and ultimately, cost savings to WVDEP. If exploratory drilling services are required, we will supplement our team with Test Boring Services Inc., who has a long standing and successful history with Baker and WVDEP.

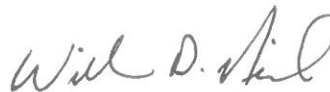
We entrust this submittal demonstrates our qualifications, experience and desire to assist WVDEP with this contract. If you have any questions or require additional information concerning our qualifications, experience or approach, please contact me at 724.495.4079, or Bill Neider at 724.495.4225.

Sincerely,

MICHAEL BAKER JR., INC.

A handwritten signature in dark ink, appearing to read "Christopher A. Ruppen".

Christopher A. Ruppen, PG
Mining Services Manager

A handwritten signature in dark ink, appearing to read "William D. Neider".

William D. Neider, P.E.
Project Manager

**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
AML CONSULTANT QUALIFICATION QUESTIONNAIRE**

Attachment "B"

PROJECT NAME Canyon Refuse & Dump Monongalia County, WV (DEP16434)		DATE (DAY, MONTH, YEAR) January 14, 2014		FEIN 25-1228638	
1. FIRM NAME Michael Baker Jr., Inc.		2. HOME OFFICE BUSINESS ADDRESS 4301 Dutch Ridge Road Beaver, Pennsylvania 15009		3. FORMER FIRM NAME	
4. HOME OFFICE TELEPHONE 724.495.7711	5. ESTABLISHED (YEAR) 1940	6. TYPE OWNERSHIP Individual <u>Corporation</u> Partnership Joint-Venture		6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) YES <u>NO</u>	
7. PRIMARY AML DESIGN OFFICE: ADDRESS / TELEPHONE / PERSON IN CHARGE / NO. AML DESIGN PERSONNEL EACH OFFICE Michael Baker Jr., Inc. / 4301 Dutch Ridge Road, Beaver, PA 15009 / 724.495.4302 / Christopher A. Ruppen, PG / 25 Russell E. (Rusty) Hall, PE, PS / 7 (Charleston, WV)					
8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM Chad R. Davis, PE, Assistant Vice President – 412.375.3077			8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS Russell E. (Rusty) Hall, PE, PS, Assistant Vice President – 304.769.0821		
9. PERSONNEL BY DISCIPLINE (Bold Lettering Indicates Minimum Design Team Members)					
<u>229</u> ADMINISTRATIVE <u>13</u> ARCHITECTS <u>2</u> BIOLOGISTS <u>55</u> CADD OPERATORS/DESIGNERS <u>1</u> CHEMICAL ENGINEERS <u>52</u> CIVIL ENGINEERS <u>66</u> CONSTRUCTION INSPECTORS / Mgrs. <u>49</u> DESIGNERS <u>9</u> DRAFTSMEN	<u>1</u> ECOLOGISTS <u>0</u> ECONOMISTS <u>4</u> ELECTRICAL ENGINEERS <u>22</u> ENVIRONMENTALISTS <u>1</u> ESTIMATORS <u>18</u> GEOLOGISTS <u>2</u> HISTORIANS <u>6</u> HYDROLOGISTS	<u>2</u> LANDSCAPE ARCHITECTS <u>7</u> MECHANICAL ENGINEERS <u>4</u> MINING ENGINEERS <u>2</u> PHOTOGRAMMETRISTS <u>6</u> PLANNERS: URBAN/REGIONAL <u>3</u> SANITARY ENGINEERS <u>0</u> SOILS ENGINEERS <u>5</u> SPECIFICATION WRITERS	<u>34</u> STRUCTURAL ENGINEERS <u>22</u> SURVEYORS/Technicians <u>6</u> TRAFFIC ENGINEERS <u>61</u> ENGINEERING TECHNICIANS <u>27</u> PROJECT MANAGERS <u>40</u> GIS SPECIALISTS <u>22</u> OTHER <u>771</u> TOTAL PERSONNEL (Beaver and Moon Township, PA and Charleston, WV Offices)		
TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: <u>16</u> * 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

NAME AND ADDRESS: Test Boring Services Inc. (If Required) 140 Mong Road Scenery Hill, PA 15360	SPECIALTY: Drilling, Geotechnical Exploration, and Monitoring	WORKED WITH BEFORE <input checked="checked" type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE <input type="checkbox"/> Yes <input type="checkbox"/> No

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

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

YES Description and Number of Projects:

Baker has been assisting state and federal agencies with abandoned mine land (AML) restoration and acid mine drainage (AMD) remediation since 1977. Baker's experience began with Operation Scarlift and now includes well over 200 AML/AMD remediation projects ranging from subsidence control, mine sealing, reclamation of mine refuse piles, strip pit and highwall regrading; drainage improvements, revegetation, stream relocation, restoration of streams and wetlands, natural streambed design, landslide correction, and replacement of water supplies affected by abandoned mine lands to abatement of AMD problems. These services are accomplished by providing a "one-stop-shop" of professionals including engineers, geologists, surveyors, and environmental scientists to address essentially any issue that may be encountered on an AML project. These professionals combine diverse experience in:

- | | | | |
|--------------------------|------------------------------|-------------------------------|------------------------|
| • Mining | • Water Treatment | • E&S Control | • Mapping |
| • Geotechnical | • Water Line Design & Supply | • Sustainable Design | • Field Reconnaissance |
| • Geology | • Grading | • Hazardous Waste Remediation | • Project Management |
| • Hydraulics & Hydrology | • Earthwork Balance | • Surveying | • Quality Control |
| • Groundwater | • Stormwater Management | | |

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 have also assisted PADEP with AML reclamation and AMD remediation designs. The "AML and related Project Experience Matrix" table provided at the end of this CCQQ shows our experience on AML related projects for different state agencies and for private clients.

NO

B. Are your firm's personnel experienced in soil analysis?

YES Description and Number of Projects:

Baker has conducted in-house soil analysis for over 60 years. We take pride in our work which starts with a geologic literature review to identify and review available references which characterize the site soils and other factors influencing the development and condition of the soils. The task is followed by a geotechnical reconnaissance which is essentially a site view by a Baker geologist or geotechnical engineer to characterize the site soil conditions. Lastly and as appropriate, a subsurface investigation is conducted to collect and identify site soils and assign appropriate engineering descriptions which are in turn utilized for soil analysis.

In designing AML reclamation projects, generally three types of soil analysis are needed. These analyses may include: a) geotechnical analysis/soil classification, b) soil analysis for revegetation potential (pH, Acid Base Accounting, Nutrients) and c) soil analysis for hazardous materials. Baker is involved in selecting and collecting the soil samples and analyzing the results of laboratory testing as required for design. Laboratory testing is performed by a subcontractor. Of the thirty (30) most recent AML projects, Baker was involved in soil analysis for 20 projects. Baker has also prepared reprocessing potential evaluations of coal refuse sites (10 projects) which required evaluation of mine refuse based on laboratory test results. Refuse testing for these projects included refuse float/sink and proximate analysis, with results evaluated by Baker to determine BTU content and reprocessing potential.

NO

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

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

YES Description and Number of Projects:

Baker's hydrology and hydraulic staff for OSR/AML 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, HYDROFLOW, 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/remediation design. Of the thirty (30) most recent AML projects, twenty seven (27) projects needed hydrology/hydraulics expertise of the AML/AMD design group and 100% of this work was conducted in-house.

NO

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, WVDEP provided Baker with contour maps developed from aerial photography of the project site. Baker's responsibility was to verify the topographic map by check field surveying.

Baker is a recognized leader in the geospatial industry, with specialized expertise in LiDAR, photogrammetric mapping, digital orthophotography production and GIS applications. We own and operate Mobile LiDAR and Aerial LiDAR systems and have a world class LiDAR processing center. As testimony to our commitment to quality, our LiDAR collection and processing workflows are **ISO 9001:2008 Certified**.

By leveraging our 70+ years of experience in the mapping sciences, Baker has remained at the forefront of Geospatial Information Technologies (GIT), surveying, and mapping, including investments in LiDAR technology spanning two decades to our successful performance of the first commercial LiDAR project. Some examples of recent and relevant projects are listed below. **Aerial Photography, Contour Mapping, and Field Surveys** are at the core of Baker's business and expertise.

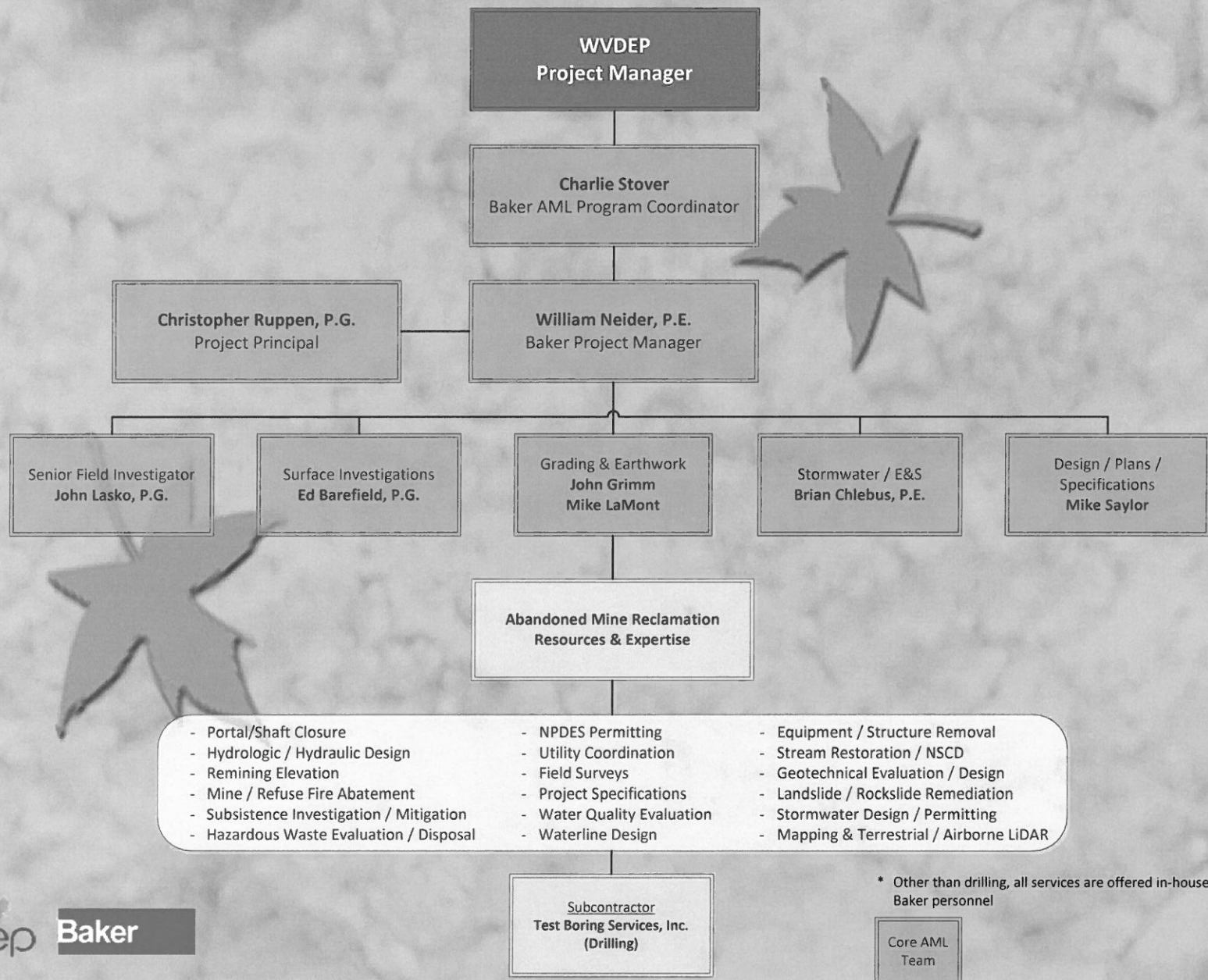
Ebenezer Run Highwall #9, Brooke County, West Virginia. *West Virginia Department of Environmental Protection, Abandoned Mine Reclamation.* Performed check survey of provided topographic mapping in accordance with WVDEP Standards. Obtained representative cross sections and survey located test boring locations.

Flat Top Dam, Ghent, West Virginia. *Flat Top Dam Lake Homeowners Association.* Performed full topographic survey of the dam, emergency spillway, in-take structure, and dam revetment. Baker also conducted boundary and property surveys.

Kammer – Mitchell Power Plant, West Virginia. *American Electric and Power.* Performed boundary surveys to determine the boundary lines of all lands owned by OPC lying between WV State Route 2 and the Ohio River in Marshall County, West Virginia. The outer boundary of the Kammer – Mitchell Power Plant contains approximately 440 acres, while the total acreage minus outsales contains approximately 377 acres.

As depicted within Attachments B and C of this AML Consultant Questionnaire Form, Baker can support this project with a variety and depth of technical resources as needed to successfully deliver this project. **However, the organization chart depicted on the following page identifies our core AML team that Baker will dedicate to our WVDEP AML work.** This team will be led by Mr. Charlie Stover, serving as Baker's AML Program Coordinator. Charlie will be supported by Bill Neider, a registered West Virginia Professional Engineer, acting as Project Manager. The balance of our committed team includes the type of capabilities required for a typical AML project, including a senior field investigator to help assess the site and understand the mining conditions, a geologist or civil associate to conduct subsurface investigations, a designer for grading and earthwork balance, a civil associate for stormwater/erosion & sedimentation control and an engineer to assist with the design, plans and specifications. This team will work together closely for design efficiency and can also handle multiple concurrent projects, tapping other Baker technical resources as needed to ensure project success.

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



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:
Stover, Charles D. Technical Consultant	39	39	-

Brief Explanation of Responsibilities

Mr. Stover's state government career began as a Dept. of Highways Construction Inspector for two years working mostly on bridge projects with the last project being the "Bigley Interchange Project" where three Interstate Highways converge in Charleston, W.Va. (I-77, I-79 & I-64). The next position was an Engineering Technician position with a new section of the WV Dept. of Natural Resources, Planning and Development Section's Coal Refuse and Dam Control Program. This was a "ground floor" position with the group being accumulated to regulate the dams and the coal refuse disposal statewide. He advanced to the Charleston District Engineer while with that group. When the new federal surface mine laws were passed in 1977 (SMCRA) this entire group was dissolved into the Reclamation Division and placed on Permit Review Teams to provide the expertise to each team for reviewing coal refuse disposal plans and dam designs for freshwater and coal slurry disposal facilities. After approximately four years of permit review, Mr. Stover accepted a position with the Abandoned Mine Lands Program (AML) in 1982 as an inspector which he held for about three years. In 1985, he accepted the position of Design Administrator for AML where he developed a process to employ various engineering consultants simultaneously to design AML projects to standards set up by AML. As his career developed he was made the Acting Chief of AML for approximately three years. The last eight years of his career was spent developing an additional office for the Special Reclamation Program to better utilize additional tax revenues that became available from a legislation action.

Ebenezer Run Highwall #9, Brooke County, West Virginia. *West Virginia Division of Environmental Protection.* Quality Control Manager. Responsibilities include quality and technical review of backfill design, channels, erosion control measures, details, technical specifications, bid tab and construction cost estimate. The project consists of reclamation of two sites with approximately 3,660 linear feet of an abandoned strip mine highwall ranging in height from 30 to 40 feet and areas of mine spoil.

Waitman Barbe Highwall #1, Monongalia County, West Virginia. *West Virginia Division of Environmental Protection.* Quality Control Manager. Responsibilities include quality and technical review of backfill design, channels, erosion control measures, details, technical specifications, bid tab and construction cost estimate. The project consists of reclamation of approximately 4,600 linear feet of an abandoned strip mine highwall ranging in height from 30 to 45 feet. This includes areas of mine spoil, three areas of exposed coal refuse, an illegal dump site containing non-hazardous construction debris and a suspected 11 mine openings.

Collier Sportmans Club Highwalls, Brooke County, West Virginia. *West Virginia Division of Environmental Protection.* Quality Control Manager. Responsibilities include quality and technical review of backfill design, channels, erosion control measures, details, technical specifications, bid tab and construction cost estimate.

As Reclamation Specialist Supervisor (2003-2011) in the Dept. of Environmental Protection-Office of Special Reclamation, Mr. Stover was responsible for:

- Setting up a new production unit to catch the program up on a backlog of projects utilizing additional tax revenues created by legislative action.
- Acquiring staffing needs (both clerical as well as technical employees (Reclamation Specialists)) to put this unit into production and begin the "catch up process."
- Responsible for seeing all reclamation designs were completed and submitted to the WV Purchasing Division for proper advertising. Meeting the interested contractors on-site and conducting a Pre-Bid Conference explaining all aspects of the design and show the project as well as answer any questions. Upon obtaining a successful bidder, conducted a Pre-Construction Conference to make sure that the contractor got started correctly and answered any questions that they may have about the design package.
- Made sure all construction on the OSR Projects was monitored and resolved any problems that arised during the construction phase.
- Saw that mine water discharges were monitored and adjusted to be in compliance with the Clean Water Act. This usually required some adjustments to active water treatment sites that have been installed throughout the region as well as "tweaking" some of the passive treatment sites that were built.
- Assured that the project database, as well as the water quality database, was maintained and kept up to date.

Mr. Stover was also a Design Administrator / Acting Chief (1985 – 2003) in the Dept. of Environmental Protection, Abandoned Mine Lands Program

EDUCATION (Degree, Year, Specialization)
AS, 1977, Commerce Accounting

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Christopher A. Ruppen, P.G. Mining Service Manager	11	28	2

Brief Explanation of Responsibilities

Mr. Ruppen is committed to client satisfaction and proactive coordination and communication with WVDEP. Based on the long running relationship between WVDEP and Baker, Mr. Ruppen conveys this approach through Baker's AML Team.

Ebenezer Run Highwall #9, Brooke County, West Virginia. *West Virginia Division of Environmental Protection.* Mining Service Manager. Responsibilities include assisting the project manager in obtaining the necessary resources to keep the project on schedule and in line with the client's expectations. The project consists of reclamation of two sites with approximately 3,660 linear feet of an abandoned strip mine highwall ranging in height from 30 to 40 feet and areas of mine spoil. Baker prepared construction plans, specifications, stormwater pollution prevention plan services and check survey.

Waitman Barbe Highwall #1, Monongalia County, West Virginia. *West Virginia Division of Environmental Protection.* Technical Manager. Participated in site field view, provided input into the subsurface investigation and interpretation and provided quality design reviews. The project consists of reclamation of approximately 4,600 linear feet of an abandoned strip mine highwall ranging in height from 30 to 45 feet. This includes areas of mine spoil, three areas of exposed coal refuse, an illegal dump site containing non-hazardous construction debris and a suspected 11 mine openings. Baker prepared construction plans, specifications and a stormwater pollution prevention plan services.

Collier Sportmans Club Highwalls, Brooke County, West Virginia. *West Virginia Division of Environmental Protection.* Technical Manager. Participated in site field view, provided input into the subsurface investigation and interpretation and provide quality design reviews. Assisted with coordination and resolution of the planned gas line crossing and construction through the site. Baker's responsibilities included research of existing geological data and mining maps, review of water quality data, erosion and sedimentation controls, design of wet and buried mine seals with bat gates at suspected mine entries, backfilling of existing highwalls to stable configurations, site grading, upgrade of existing access roads, reclamation of onsite spoil and coal refuse, culverts and channel design, removal of non-hazardous trash and waste from the site, and revegetation of all disturbed areas. Additional responsibilities were for coordination of the check survey and drilling by sub-consultants and the preparation of the WV NPDES Stormwater Permit.

Simpson Creek Highwall, Tipton, & Portals, Barbour County, West Virginia. *West Virginia Division of Environmental Protection.* Department Manager. Responsible for quality of project managers work on the project. Baker was responsible for drilling by sub-consultants, performed research of geological data and mining maps, review of water quality data, preparation of WV Stormwater, USACE, and WVDOH permits. Prepared construction plans and specifications for the project which included erosion and sedimentation control measures, site grading, mine seals, HDPE culverts, a WVDOH box culvert crossing SR 76, grouted rip rap collection channels, soil cover placement, and revegetation.

Foundation Mine Design/Permitting Shaft & Slope Site, Surface Facilities and Batch Weigh System Site, and RR Spur and Siding. *Alpha Natural Resources, Inc.* Project Manager. Responsibilities included overseeing grading design of access roads, site development, and permitting requirements. Baker was responsible for developing several conceptual layouts for shaft and slope sites and rail spur with rail car loadout arrangements and evaluating them in order to optimize and finalize the locations of various surface facilities relative to the shaft and slope including overland conveyors for raw and clean coal transport with transfer stations, raw and clean coal stockpiles and slot storage and reclamation tunnel for clean coal, coal preparation plant water storage tanks, access roads to surface facilities, and batch weigh loadout for rail cars. Baker was also responsible to design the rail spur, siding and track layout for rail car loading.

Design and Permitting for Surface Facilities of New Freeport Underground Mine, Clarksville, Pennsylvania. *Alpha Natural Resources, Inc.* Project Manager. Aided in the engineering design of the project. Baker prepared, submitted, and obtained Surface Mining Control and Reclamation Act and National Pollutant Discharge Elimination System permits for the proposed surface facilities associated with the new Freeport Underground Mine. Baker was responsible for the design of the proposed surface facilities, including preparation of the earthwork and grading plan and the design of the foundations for all belt transfer structures, stockpiles, prep plant, clean coal silos, refuse conveyors, clean coal conveyors, and the harbor barge loading facility.

EDUCATION (Degree, Year, Specialization)

Master's Certificate, 2005, Project Management; B.S., 1984, Conservation of Natural Resources; B.S., 1984, Geology, Kent State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Society of Highway Engineers (ASHE); Highway Geology Symposium (HGS), National Steering Committee; Pittsburgh Geological Society (PGS), Board of Directors and Past President, Member Transportation Research Board (TRB), Materials, Engineering Geology and Subsurface Investigations

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 Init.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Neider, William, D., P.E. Project Manager	2	13	11

Brief Explanation of Responsibilities

Mr. Neider will oversee all aspects of the design, construction document preparation and permitting for site civil engineering projects. He has worked in various areas of the civil engineering practice with his primary area of experience being focused in mining permitting and reclamation projects, oil and gas permitting, land development, local transportation projects, and municipal services. He has managed projects and designed the improvements and infrastructure for commercial development, military/U.S. Government, residential subdivisions, industrial parks and sites, educational facilities, and local streets. In addition to land development experience, he has designed and directed a number of mining facilities infrastructure permitting and reclamation projects including refuse impoundments, coarse refuse piles, erosion and sedimentation control plans, and site reclamation. He has experience in numerous transportation projects varying from interstate routes to local streets including the design of traffic circles and other traffic calming techniques. He also performed municipal engineering designs that included water distributions extensions, sewer modeling/design, drainage studies and flood abatement designs. In all areas of his experience, he has been involved in every aspect of the design and construction document preparation, as well as management of design teams and project management. Mr. Neider has also been involved in the oversight of the construction phase of projects. His experience has been with coordinating the review of project submittals, answering requests for information, and resolving construction related issues to ensure proper conformance to the design intent.

Ebenezer Run Highwall #9, Brooke County, West Virginia. *West Virginia Division of Environmental Protection.* Project Manager. Responsibilities include project manager duties, quality control/quality assurance reviews of the project, and project design. Also responsible for construction cost estimate, stormwater pollution prevention plan, technical specifications, and NPDES permitting. The project consists of reclamation of two sites with approximately 3,660 linear feet of an abandoned strip mine highwall ranging in height from 30 to 40 feet and areas of mine spoil. Baker prepared construction plans, specifications, stormwater pollution prevention plan services and check survey.

Waitman Barbe Highwall #1, Monongalia County, West Virginia. *West Virginia Division of Environmental Protection.* Project Manager. Responsibilities include project manager duties, quality control/quality assurance reviews of the project, and design of channels and channel linings at the toe of the backfilled highwall. Also responsible for construction cost estimate, stormwater pollution prevention plan, and technical specifications. The project consists of reclamation of approximately 4,600 linear feet of an abandoned strip mine highwall ranging in height from 30 to 45 feet. This includes areas of mine spoil, three areas of exposed coal refuse, an illegal dump site containing non-hazardous construction debris and a suspected 11 mine openings. Baker prepared construction plans, specifications and a stormwater pollution prevention plan services.

Collier Sportmans Club Highwalls, Brooke County, West Virginia. *West Virginia Division of Environmental Protection.* Project Manager. Responsibilities include project manager duties, quality control/quality assurance reviews of the project, and design of channels and channel linings at the toe of the backfilled highwall. Also responsible for construction cost estimate, stormwater pollution prevention plan, and technical specifications. Involved with proposed gas line crossing with resolution and coordination between the gas line company and the WVDEP. Baker's responsibilities included research of existing geological data and mining maps, review of water quality data, erosion and sedimentation controls, design of wet and buried mine seals with bat gates at suspected mine entries, backfilling of existing highwalls to stable configurations, site grading, upgrade of existing access roads, reclamation of onsite spoil and coal refuse, culverts and channel design, removal of non-hazardous trash and waste from the site, and revegetation of all disturbed areas. Additional responsibilities were for coordination of the check survey and drilling by sub-consultants and the preparation of the WV NPDES Stormwater Permit.

Emerald No. 3 Revisions. *Emerald Coal Resources, LP.* Senior Engineer. Responsibilities included assisting project manager with addressing DEP and MSHA comments for the Emerald Area 3 project and resubmitting package. Participated in review of comments with client and DEP to ensure Baker take right direction in addressing comments and oversee implementation of changes per comments. Also did technical design of rock drain bypass system, recirculation pump system for internal drains and runoff that don't meet discharge limits and sedimentation pond erosion control sequencing plans.

Freeport Mine - PH I - Preparation of 6 Design Build RFP Packages and 1 Site Design -Bid Build Bid Package. *Freeport Mining.* Senior Engineer. Responsibilities included technical specifications, storm water and erosion control management review and a constructibility review of the project plan set. Assisted project manager in putting bid packages together.

EDUCATION (Degree, Year, Specialization)
B.S.A.S., 2001, Civil Engineering Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

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REGISTRATION (Type, Year, State)
Professional Engineer, 2013, WV
Professional Engineer, 2007, 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:
Lasko, John D., P.G. Senior Geologist	6	25	0
<p>Brief Explanation of Responsibilities</p> <p>Mr. Lasko's background encompasses a variety of geotechnical projects. His experience includes project task management, test boring layout, drilling inspection, geotechnical interpretation of subsurface geology, construction inspection and related project field work.</p> <p>Waitman Barbe Highwall #1, Monongalia County, West Virginia. <i>West Virginia Division of Environmental Protection.</i> Geologist. Assisted in the field view and determination of mining conditions. The project consists of reclamation of approximately 4,600 linear feet of an abandoned strip mine highwall ranging in height from 30 to 45 feet. This includes areas of mine spoil, three areas of exposed coal refuse, an illegal dump site containing non-hazardous construction debris and a suspected 11 mine openings. Baker prepared construction plans, specifications and a stormwater pollution prevention plan services.</p> <p>Collier Sportmans Club Highwalls, Brooke County, West Virginia. <i>West Virginia Division of Environmental Protection.</i> Geologist. Assisted in the subsurface investigation. Baker's responsibilities included research of existing geological data and mining maps, review of water quality data, erosion and sedimentation controls, design of wet and buried mine seals with bat gates at suspected mine entries, backfilling of existing highwalls to stable configurations, site grading, upgrade of existing access roads, reclamation of onsite spoil and coal refuse, culverts and channel design, removal of non-hazardous trash and waste from the site, and revegetation of all disturbed areas. Additional responsibilities were for coordination of the check survey and drilling by sub-consultants and the preparation of the WV NPDES Stormwater Permit.</p> <p>Site Design and Permitting for Cumberland Mine Air Shaft Number 10, Greene County, Pennsylvania. <i>Alpha Natural Resources, Inc.</i> Senior Staff Consultant. Responsible for site reconnaissance to evaluate landslide susceptibility for project site. Evaluated overall site for landslide potential, groundwater conditions, bedrock and structural geology. Evaluated proposed test boring program and recommended modifications to accommodate investigation of site conditions. Evaluated and modified testing program to accommodate site conditions. Prepared site reconnaissance plan and provided recommendations for final subsurface investigation and testing and site design. Baker developed site design and construction documents and cost estimates and provided permitting services for the Number 10 air intake shaft and associated site infrastructure, including a one-mile-long access road, at the Cumberland Mine.</p> <p>S.R. 0079, Section A23, Interstate 79 Missing Ramps, Collier and Robinson Townships, Pittsburgh, Pennsylvania. <i>Pennsylvania Department of Transportation, District 11-0.</i> Senior Geologist. Responsible for performing field and office coordination for preliminary and final design as geotechnical task manager. Tasks included test boring layout and laboratory testing program development, Level 2 drilling supervision, field data compilation, slope evaluation, rockfall hazard evaluation, mine treatment evaluation, water quality evaluation, and preliminary reports preparation.</p> <p>Allegheny Valley Train Feasibility Study, Strip District, Pittsburgh to New Kensington, Pennsylvania. <i>Southwestern Pennsylvania Commission.</i> Senior Geologist. Responsible for performing site reconnaissance of two-mile section of railway to identify areas of landslide susceptibility and investigate potential for mine subsidence. Developed recommendations memorandum and cost estimate to investigate, evaluate and repair landslides. In addition, an assessment of mine subsidence potential and subgrade evaluation was performed.</p> <p>Cumberland Mine No. 8 Shaft Site Design and Permitting, Waynesburg, Pennsylvania. <i>Foundation Coal.</i> Senior Geologist. Responsible for performance of slope stability analysis for proposed infrastructure related to construction shaft and bleeder sites. Tasks included site reconnaissance, subsurface investigation, slope stability analysis and design drawings assistance. Baker provided site design, permitting, and construction document preparation for the No. 8 shaft and portal facility.</p> <p>Freeport Mine - PH I - Preparation of 6 Design Build RFP Packages and 1 Site Design -Bid Build Bid Package. <i>Freeport Mining.</i> Task Manager. Responsible for preparation of Geotechnical Data Report and geotechnical evaluation and design for earthwork for proposed mining facility.</p>			
EDUCATION (Degree, Year, Specialization)			
M.S., 1989, Earth Science and Geology, California University of Pennsylvania; B.S., 1985, Geology, Juniata College			
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:
Barefield, Edward, P.G. Geologist	2	8	0

Brief Explanation of Responsibilities

Mr. Barefield is an engineering geologist within the geotechnical civil engineering unit at Baker. His geotechnical experience includes drilling inspection and subcontract administration/coordination, laboratory testing interpretations and subcontract administration/coordination, subsurface geology geotechnical interpretation, detailed soil and rock slope stability analyses, structure foundation bearing capacity and settlement calculations, mine subsidence evaluations, aerial and satellite photograph interpretation, field geology reconnaissance and sampling, geotechnical literature review, drilling and laboratory testing program preparation and execution, and geotechnical report preparation and reviews.

Simpson Creek Highwall, Tipple, & Portals, Barbour County, West Virginia. *West Virginia Department of Environmental Protection.* Geologist. Responsible for test boring and open standpipe piezometer installation inspection with office follow up to provide boring logs for use in design of Acid Mine Drainage remediation.

Wymer Portals and Davidson Highwall Abandoned Mine Complex Reclamation Design, Monongalia County, West Virginia. *West Virginia Department of Environmental Protection.* Geologic Associate. Responsible for on-site geotechnical test boring inspection and oversight. Baker performed site mapping and exploratory drilling and prepared plans and specifications for the reclamation of two large abandoned mine complexes. The proposed remediation designs included the elimination of impounded mine water; installation of wet mine seals; elimination of highwalls through earthwork and site grading, using available on-site refuse and spoil materials; and final site revegetation. The project plans included the addition of numerous required surface water and mine drainage structures, such as ditches, pipes, and underdrains. Bat gates were provided for several mine openings.

Site Design and Permitting for Cumberland Mine Air Shaft Number 10, Greene County, Pennsylvania. *Alpha Natural Resources, Inc.* Geologist. Responsible for geotechnical drilling and sampling inspection and laboratory testing sample selection and testing schedule preparation. Responsible for test boring log preparation and geotechnical site reconnaissance and field mapping and field reconnaissance map preparation. Also responsible for interpretation of site geology and preparation of geologic sections for geotechnical design. Baker developed site design and construction documents and cost estimates and provided permitting services for the Number 10 air intake shaft and associated site infrastructure, including a one-mile-long access road, at the Cumberland Mine.

Mine Permit Application Assistance, Confidential Location, West Virginia. *Confidential Client.* Geologic Associate. Responsible for providing field water sampling services which included determining stream discharges in the field, water sample collection, and field chemistry measurements using field measuring apparatus. Performed field study to inventory property parcels and water resources for area to be longwall undermined.

EDUCATION (Degree, Year, Specialization)
M.S., 2004, Engineering Geology, Kent State University
B.S., 2002, Geology, Youngstown State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Association of Environmental & Engineering Geologists (AEG), Allegheny-Ohio Section, ID# 7038	REGISTRATION (Type, Year, State) Professional Geologist, 2010, PA PENNDOT Drilling Inspector, Level I, 2006, PA
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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:
Grimm, John R. (JR) Senior Designer	3	27	0

Brief Explanation of Responsibilities

Mr. Grimm is a designer with a background in pipelines, reclamation of abandoned mine lands including acid mine drainage abatement, earthwork, grading plans, stream channel restoration, sealing of mine portals and reclamation of coal refuse piles. While at Baker he has worked on many abandoned mine land reclamation and mine shaft site design and permitting projects. His site / civil qualifications also consist of parking lot layout and design, roadway geometry, right-of-way acquisition, drainage, storm sewer and sanitary sewer design.

Ebenezer Run Highwall #9, Brooke County, West Virginia. *West Virginia Division of Environmental Protection.* CADD Designer. Responsible for the preparation of construction drawings including the design of the proposed grading required to reclaim the existing high wall and balancing the earthwork on site. The project consists of reclamation of two sites with approximately 3,660 linear feet of an abandoned strip mine highwall ranging in height from 30 to 40 feet and areas of mine spoil. Baker prepared construction plans, specifications, stormwater pollution prevention plan services, NPDES permitting and check survey.

Waitman Barbe Highwall #1, Monongalia County, West Virginia. *West Virginia Division of Environmental Protection.* CADD Designer. Responsible for the preparation of construction drawings including the design of the proposed grading required to reclaim the existing high wall and balance the earthwork on site. Design responsibilities also included the layout of several mine seals including bat gates where required. The project consists of reclamation of approximately 4,600 linear feet of an abandoned strip mine highwall ranging in height from 30 to 45 feet. This includes areas of mine spoil, three areas of exposed coal refuse, an illegal dump site containing non-hazardous construction debris and a suspected 11 mine openings. Baker prepared construction plans, specifications and a stormwater pollution prevention plan services.

Collier Sportmans Club Highwalls, Brooke County, West Virginia. *West Virginia Division of Environmental Protection.* CADD Designer. Responsible for the preparation of construction drawings including the design of the proposed grading required to reclaim the existing high wall and balance the earthwork on site. Design responsibilities also included the layout of several mine seals including bat gates where required. Baker's responsibilities included research of existing geological data and mining maps, review of water quality data, erosion and sedimentation controls, design of wet and buried mine seals with bat gates at suspected mine entries, backfilling of existing highwalls to stable configurations, site grading, upgrade of existing access roads, reclamation of onsite spoil and coal refuse, culverts and channel design, removal of non-hazardous trash and waste from the site, and revegetation of all disturbed areas. Additional responsibilities were for coordination of the check survey and drilling by sub-consultants and the preparation of the WV NPDES Stormwater Permit.

Simpson Creek Highwall, Tipple, & Portals, Barbour County, West Virginia. *West Virginia Division of Environmental Protection.* CADD Designer. Responsible for the preparation of construction drawings including the design of the proposed grading required to reclaim the existing high wall, balance the earthwork on site, and provide adequate drainage from the site. Baker was responsible for drilling by sub-consultants, performed research of geological data and mining maps, review of water quality data, preparation of WV Stormwater, USACE, and WVDOH permits. Prepared construction plans and specifications for the project which included erosion and sedimentation control measures, site grading, mine seals, HDPE culverts, a WVDOH box culvert crossing SR 76, grouted rip rap collection channels, soil cover placement, and revegetation.

2007-2008 Foundation Mine Design/Permitting Shaft & Slope Site, Surface Facilities and Batch Weigh System Site, and RR Spur and Siding. *Alpha Natural Resources, Inc.* Designer. Responsibilities included grading design of access roads, site development, and permitting requirements. Baker was responsible for developing several conceptual layouts for shaft and slope sites and rail spur with rail car loadout arrangements and evaluating them in order to optimize and finalize the locations of various surface facilities relative to the shaft and slope including overland conveyors for raw and clean coal transport with transfer stations, raw and clean coal stockpiles and slot storage and reclamation tunnel for clean coal, coal preparation plant water storage tanks, access roads to surface facilities, and batch weigh loadout for rail cars. Baker was also responsible to design the rail spur, siding and track layout for rail car loading.

Design and Permitting for Surface Facilities of New Freeport Underground Mine, Clarksville, Pennsylvania. *Alpha Natural Resources, Inc.* CADD Designer. Aided in the engineering design of the project. Baker prepared, submitted, and obtained Surface Mining Control and Reclamation Act and National Pollutant Discharge Elimination System permits for the proposed surface facilities associated with the new Freeport Underground Mine. Baker was responsible for the design of the proposed surface facilities, including preparation of the earthwork and grading plan and the design of the foundations for all belt transfer structures, stockpiles, prep plant, clean coal silos, refuse conveyors, clean coal conveyors, and the harbor barge loading facility

EDUCATION (Degree, Year, Specialization)
A.S., 1984, Mechanical Engineering Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

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REGISTRATION (Type, Year, State)

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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 Init.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
LaMont, Michael, J. Technical Specialist	16	26	20

Brief Explanation of Responsibilities

Mr. LaMont is a designer with a background in pipelines, telecommunications, reclamation of abandoned mine lands including acid mine drainage abatement, earthwork, grading plans, stream channel restoration, sealing of mine portals and reclamation of coal refuse piles. While at Baker he has worked on many abandoned mine land reclamation and mine shaft site design and permitting projects. His site / civil qualifications also consist of parking lot layout and design, roadway geometry, right-of-way acquisition, drainage, storm sewer and sanitary sewer design. Additional telecommunications experience include fiber optic cable construction and installation drawings along highways, railroads and cross country routes, as well as stream and road crossing drawings and cross sections, and state, local and environmental permit drawings.

Waitman Barbe Highwall #1, Monongalia County, West Virginia. *West Virginia Division of Environmental Protection.* Technical Specialist. Prepared construction plans, details, and cross-section sheets and earthwork balancing for the project, and highwall backfilling grading. Provided erosion and sedimentation control measures, site regrading, mine seals, and collection and diversion ditch alignments and profiles. Baker's responsibilities included research of existing geological data and mining maps, review of water quality data, erosion and sedimentation controls, design of wet and buried mine seals with bat gates at suspected mine entries, backfilling of existing highwalls to stable configurations, site grading, upgrade of existing access roads, reclamation of onsite spoil and coal, culverts and channel, removal of non-hazardous trash and waste from the site, and revegetation of all disturbed areas. Additional responsibilities were for coordination of the check survey and drilling by sub-consultants and the preparation of the WV NPDES Stormwater Permit.

Collier Sportmans Club Highwalls, Brooke County, West Virginia. *West Virginia Division of Environmental Protection.* Technical Specialist. Prepared construction plans, details, and cross-section sheets and earthwork balancing for the project, and highwall backfilling grading. Provided erosion and sedimentation control measures, site regrading, mine seals, and collection and diversion ditch alignments and profiles. Baker's responsibilities included research of existing geological data and mining maps, review of water quality data, erosion and sedimentation controls, design of wet and buried mine seals with bat gates at suspected mine entries, backfilling of existing highwalls to stable configurations, site grading, upgrade of existing access roads, reclamation of onsite spoil and coal refuse, culverts and channel design, removal of non-hazardous trash and waste from the site, and revegetation of all disturbed areas. Additional responsibilities were for coordination of the check survey and drilling by sub-consultants and the preparation of the WV NPDES Stormwater Permit.

Maple Run Portals and Tipple, West Virginia. *West Virginia Division of Environmental Protection.* Prepared construction plan, profile, detail, and cross section sheets and earthwork balancing 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 Division of Environmental Protection.* Prepared construction plan, profile, detail, and cross section sheets and earthwork balancing 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 Division of Environmental Protection.* Prepared construction plan, profile, detail, and cross section sheets and earthwork balancing 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.* Prepared construction plan, profile, detail, and cross section sheets and earthwork balancing for the project which included erosion and sedimentation control measures, site regrading, mine seals, collection and diversion ditches, placement of soil cover, and revegetation.

EDUCATION (Degree, Year, Specialization)

Certificate, 1986, Computer Aided Drafting and Design

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

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REGISTRATION (Type, Year, State)

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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:
Chlebus, Brian, P.E. Civil Engineer	2	10	1

Brief Explanation of Responsibilities

Mr. Chlebus is a Civil Engineer at Baker has over eight years of civil engineering experience. His experience primarily relates to development of oil and gas resources and civil site development with specialized expertise in stormwater management and erosion and sediment pollution control planning. Mr. Chlebus has also had exposure to a variety of other project types including those related to surface mining, government facilities, and linear utilities.

Waitman Barbe Highwall #1, Monongalia County, West Virginia. West Virginia Division of Environmental Protection. Civil Engineer. Provided engineering support for design of conveyance channels. The project consists of reclamation of approximately 4,600 linear feet of an abandoned strip mine highwall ranging in height from 30 to 45 feet. This includes areas of mine spoil, three areas of exposed coal refuse, an illegal dump site containing non-hazardous construction debris and a suspected 11 mine openings. Baker prepared construction plans, specifications and a stormwater pollution prevention plan services.

2007-2008 Foundation Mine Design/Permitting Shaft & Slope Site, Surface Facilities and Batch Weigh System Site, and RR Spur and Siding. Alpha Natural Resources, Inc. Civil Engineer. Responsible for stormwater management and drainage design. Baker was responsible for developing several conceptual layouts for shaft and slope sites and rail spur with rail car loadout arrangements and evaluating them in order to optimize and finalize the locations of various surface facilities relative to the shaft and slope including overland conveyors for raw and clean coal transport with transfer stations, raw and clean coal stockpiles and slot storage and reclamation tunnel for clean coal, coal preparation plant water storage tanks, access roads to surface facilities, and batch weigh loadout for rail cars. Baker was also responsible to design the rail spur, siding and track layout for rail car loading.

Design and Permitting for Surface Facilities of New Freeport Underground Mine, Clarksville, Pennsylvania. Alpha Natural Resources, Inc. Civil Engineer. Provided engineering support. Baker prepared, submitted, and obtained Surface Mining Control and Reclamation Act and National Pollutant Discharge Elimination System permits for the proposed surface facilities associated with the new Freeport Underground Mine. Baker was responsible for the design of the proposed surface facilities, including preparation of the earthwork and grading plan and the design of the foundations for all belt transfer structures, stockpiles, prep plant, clean coal silos, refuse conveyors, clean coal conveyors, and the harbor barge loading facility.

Emerald No. 3 Revisions. Emerald Coal Resources, LP. Civil Engineer. Assisted with design and analysis for stormwater management devices and detention basins.

Foundation Mine – Alternate Refuse Site Selection & Water Feasibility Study. Emerald Coal Resources, LP. Civil Engineer. Responsible for stormwater management and drainage design. Baker's responsibility included: identification of alternate potential refuse disposal sites with a 25-square-mile search area around a proposed coal preparation plant, site reconnaissance collecting reasonable available pertinent environmental data, literature search to supplement limited data available from field observations, and evaluating each site in accordance with PADEP's Technical Guidance Document (TGD Number563-2113-660) on coal refuse disposal site selection process as well as satisfying good engineering practice.

EDUCATION (Degree, Year, Specialization)

M.S., Civil and Environmental Engineering, 2004
B.E., Civil and Environmental Engineering, 2003

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Society of Wetland Scientists

REGISTRATION (Type, Year, State)

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Saylor, Michael J., E.I.T. Civil Associate	2	2	1
<p>Brief Explanation of Responsibilities</p> <p>Mr. Saylor is a civil associate with Michael Baker Jr., Inc. He has supported erosion and sedimentation control plans such as designing collection channels, water conveyance structures, sedimentation ponds, sediment traps, and other control devices. Mr. Saylor also has experience reviewing flood plains, developing hydraulic models, performing stormwater management and conveyance calculations, and assists in NPDES Stormwater permitting. In the field he has performed inspections for drilling, as well as sediment, surface soil, and surface water sampling for Baker. Prior to coming to Baker he served as a laboratory technician testing a variety of soils and aggregates in accordance with AASHTO and ASTM standards.</p> <p>Ebenezer Run Highwall #9, Brooke County, West Virginia. <i>West Virginia Division of Environmental Protection.</i> Civil Associate. Responsibilities included the conceptual design of stormwater channels, sediment basins, and additional erosion and sedimentation controls. Additional responsibilities were for the coordination and inspection of drilling by sub-consultants, collecting water quality samples, and preparation of the WV NPDES Stormwater Permit. The project consists of reclamation of two sites with approximately 3,660 linear feet of an abandoned strip mine highwall ranging in height from 30 to 40 feet and areas of mine spoil. Baker prepared construction plans, specifications, stormwater pollution prevention plan services, NPDES permitting and check survey.</p> <p>Waitman Barbe Highwall #1, Monongalia County, West Virginia. <i>West Virginia Division of Environmental Protection.</i> Civil Associate. Responsibilities included developing the conceptual design, erosion and sediment control plans, and water conveyance structures. The project consists of reclamation of approximately 4,600 linear feet of an abandoned strip mine highwall ranging in height from 30 to 45 feet. This includes areas of mine spoil, three areas of exposed coal refuse, an illegal dump site containing non-hazardous construction debris and a suspected 11 mine openings. Baker prepared construction plans, specifications and a stormwater pollution prevention plan services.</p> <p>Collier Sportmans Club Highwalls, Brooke County, West Virginia. <i>West Virginia Division of Environmental Protection.</i> Civil Associate. Responsibilities included developing the erosion and sediment control plans, helping prepare the specifications and plans of the report, and inspecting the drilling occurring on site. Baker's responsibilities included research of existing geological data and mining maps, review of water quality data, erosion and sedimentation controls, design of wet and buried mine seals with bat gates at suspected mine entries, backfilling of existing highwalls to stable configurations, site grading, upgrade of existing access roads, reclamation of onsite spoil and coal refuse, culverts and channel design, removal of non-hazardous trash and waste from the site, and revegetation of all disturbed areas. Additional responsibilities were for coordination of the check survey and drilling by sub-consultants and the preparation of the WV NPDES Stormwater Permit.</p>			
<p>EDUCATION (Degree, Year, Specialization) B.S., 2012, Civil Engineering</p>			
<p>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Society of Civil Engineers (ASCE)</p>		<p>REGISTRATION (Type, Year, State) Engineer-In-Training, Ohio, 2012</p>	

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	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	18	28	19

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

WVDEP14387, Harrison County, West Virginia. *West Virginia Division of Environmental Protection, Office of AML&R.* Project Manager. 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, West Virginia. *West Virginia Division of Environmental Protection, Office of AML&R.* Project Manager. Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at four sites (Marmet (Wells Drive), Cabin Creek (Stapler), East Bank (Garten), and the Mill Hollow Complex) in eastern Kanawha County.

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

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

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

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

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

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Society of Civil Engineers International Right of Way Association American Planning Association	REGISTRATION (Type, Year, State) <u>Professional Engineer:</u> 1990, WV; 1996, OH; 2000, KY <u>Professional Surveyor:</u> 1993, WV; 1996, OH; Professional Land Surveyor, 2001, KY LEED Green Associate, 2012
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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	16	17	0

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.

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.

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

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. *Confidential Client.* 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
American Society of Civil Engineers

REGISTRATION (Type, Year, State)
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:
Callahan, John A., P.G. Senior Geologist	8	8	5

Brief Explanation of Responsibilities

Mr. Callahan is experienced in conducting geologic and geological engineering preliminary office studies, field reconnaissance, site investigations, and attendant engineering analysis for a wide variety of projects related to resource assessment, industrial waste disposal, environmental compliance, land development, slope stability, utility routing, and foundation design. He has considerable experience in many aspects of residual waste (fly ash) disposal, including performing site screening, site selection, site investigation, and geologic and geological engineering analysis; assisting in pile design, investigation, and evaluation of environmental regulatory compliance requirements; and preparing exhaustive regulatory documentation. In addition, he has expertise in the quality control/quality assurance of geosynthetic installation. Mr. Callahan is also knowledgeable in earthen borrow resource assessment, materials classification, and volume calculations for geologic materials borrow facilities. He is also experienced in slope stability analysis, rockfall analysis, and pavement design.

Barberton & Mount Eaton Subsidence Risk Evaluation, Barberton and, Mount Eaton, Ohio. *Ohio Department of Natural Resources.* Geologist. Supervised and inspected field investigation, conducted field reconnaissance, gathered extensive information through interview of local residents, developed methodology for rating subsidence risk by numerical evaluation of factors by integrating new and previous borehole and geophysical data, prepared the final report of investigations. A residential area within the City of Barberton, Summit County, Ohio is known to be undermined by unmapped workings in the Sharon #1 Coal Seam. Baker Geotechnical was engaged to conduct a literature review, compile, and analyze past subsurface investigations, develop and inspect a drilling program intended to confirm suspected workings and inspect borehole camera investigation in the mine openings encountered in drilling to determine mine condition and direction, if possible. Following analysis of these various data, a consistent and justifiable subsidence risk evaluation procedure was developed to render an objective evaluation of the relative subsidence risk for the areas of concern.

Cumberland Mine Shaft and Portal Facility Services, No. 6 Shaft, Waynesburg, Pennsylvania. *Pennsylvania Services Corporation.* Geologist. Performed preliminary geologic hazard assessment and subsurface investigation at the Cyprus-Cumberland coal mine access road. Baker provided site design, permitting, and construction phase services for development of the Cumberland Mine No. 6 Shaft and Portal facility in Waynesburg, Pennsylvania. Baker developed the site grading plan, designed drainage structures and erosion/sedimentation controls and developed the ultimate site reclamation plan. Site work for this project included: a 1.6 mile access road over hilly terrain; a 1,000-foot-long stream enclosure; a shaft and portal area; a sedimentation pond and other erosion and sedimentation control structures; and a replacement wetland. The following permits were applied for and obtained: PADEP Coal Mining Activity Permit Revision, USACE 404 Permit, PADOT Highway Occupancy Permit, Sewage Treatment plant Permit, and County Land Development Permit for bathhouse construction.

Armstrong New Site Phase II, (near) Reesedale, Pennsylvania. *Allegheny Power System.* Geologist. Performed STABL5 slope stability analysis on several proposed fly ash pile and earthen embankment configurations. Extensively revised the previously authored Pennsylvania Department of Environmental Protection Forms 6R: Geologic Information and 10R: Minerals Information to comply with new regulations. Prepared quality control and quality assurance documents and technical specifications for the proposed Pennsylvania Department of Environmental Protection Class I HDPE liners. Performed veneer stability calculations for the proposed Pennsylvania Department of Environmental Protection Class I HDPE liners. Baker was tasked to investigate potential sites for a new landfill facility near Allegheny Power System: Armstrong Power Station. Site selection studies were undertaken and completed, and then detailed subsurface investigations were conducted to determine foundation conditions and status/extent of undermining. After initial site characterization was complete, full engineering design and permit application was undertaken for a permitted landfill facility under current PADER regulations.

Currie Landfill and Kelly Farm Sludge Lagoon Remediation Design, Millcreek and Fairview Townships, Pennsylvania. *Pennsylvania Department of Environmental Protection.* Geologist. Performed veneer stability calculations, detailed multi-scenario transmissivity analysis of geosynthetic cap, piping design, granular filter design, and preparation of details for the client's permit submission for the Kelly Farm Landfill Cover. Baker is performing a wetland investigation and delineation at the Currie Landfill site, and is developing construction drawings, technical specifications, and permit documents to construct interim remediation measures for the Currie Landfill site and the Kelly Farm sludge lagoon. Baker's services include project management; subconsultant procurement; wetland site survey, delineation, and jurisdictional determination; development of plans, specifications, and cost estimates; and preparation of permit documentation.

EDUCATION (Degree, Year, Specialization)

B.S., 1980, Geological Engineering,

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

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REGISTRATION (Type, Year, State)

Professional Geologist, 1995, PA; 1996, MO; 1999, MS

Certified CQA Geosynthetic Materials Inspector, 2008

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Smithson, Jason T., P.S. Project Manager/Senior Eng. Technician	12	12	2

Brief Explanation of Responsibilities

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

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

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

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

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

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

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

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

EDUCATION (Degree, Year, Specialization)

B.S., 1999, Geology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

Licensed Professional Surveyor, 2007, WV

OSHA 40-Hour HAZWOPER Certification, 1999, WV

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
Ciucci, Ronald J., P.E. Senior Engineer	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
	0	22	22

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.

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.

ALCOSAN Service Area Wide Flow Monitoring Program. *Allegheny County Sanitary Authority.* Task Manager. 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. 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.

EDUCATION (Degree, Year, Specialization)	REGISTRATION (Type, Year, State)
B.S., 1992, Civil Engineering	Professional Engineer, 1997, WV; 1998, VA; 1998, MD; 1997, OH; 1997, PA

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
American Society of Civil Engineers Society of American Military Engineers

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

NAME & TITLE (Last, First, Middle Init.)	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	6	38	38

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 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

American Society of Civil Engineers
American Water Works Association
Chi Epsilon Civil Engineering Honorary Fraternity
Pennsylvania Water Environment Association
Water Environment Federation

REGISTRATION (Type, Year, State)

Professional Engineer, 1976, WV; 1976, PA
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:
Kay, George, P.E. Sr. Consultant - Water Quality Engineering	15	30+	0
<p>Brief Explanation of Responsibilities</p> <p>Mr. Kay solves problems related to water quality, water and wastewater treatment, and aquatic ecosystem restoration. He has completed projects for the U.S. Coast Guard, Army, National Guard Bureau, Navy, National Park Service, and Department of Energy; twelve State government agencies; sanitary and hydropower authorities; and major representatives of the ferrous and non-ferrous metals, mining, power, petroleum, coal bed methane and shale gas, chemical, rail, air freight, insurance, site remediation, telecommunications, manufactured products, entertainment and construction industries. Areas of practice include Clean Water Act and Safe Drinking Water Act compliance assistance, design and operational troubleshooting of treatment plants, root cause analysis of myriad problems with finished waters (e.g., permit excursions, aquatic toxicity, product defects, treatment costs, corrosion, etc.), aquatic impact assessment, source water evaluations, training of engineers and treatment plant operators, and lake/lagoon management. He has served as Project Manager for systems treating sewage, various industrial wastewaters, acid mine drainage, contaminated groundwater, and potable water, built across ten States and at eight locations overseas, and has served on due diligence teams for numerous corporate acquisitions and divestitures, spill investigations, and routine EHS audits. Compliance assistance, troubleshooting assignments, and watershed investigations completed across 42 States and at locations overseas. Prior to joining Baker, Mr. Kay was Senior Staff Engineer (Water and Wastewater) for a <i>Fortune 500</i> steel producer.</p> <p>Currie Landfill and Kelly Farm Sludge Lagoon Remediation Design, Millcreek and Fairview Townships, Pennsylvania. <i>Pennsylvania Department of Environmental Protection.</i> Environmental Engineer. Responsible for sludge stabilization study and specifications for pore water treatment. Baker is performing a wetland investigation and delineation at the Currie Landfill site, and is developing construction drawings, technical specifications, and permit documents to construct interim remediation measures for the Currie Landfill site and the Kelly Farm sludge lagoon. Baker's services include project management; subconsultant procurement; wetland site survey, delineation, and jurisdictional determination; development of plans, specifications, and cost estimates; and preparation of permit documentation.</p> <p>Design & Permit Freeport Potable Water & Sewer System. <i>Emerald Coal Resources, LP.</i> Environmental Engineer. Responsible for design of water intake and treatment plant for coal preparation plant, submerged Johnson screens, coagulation, DynaSand filters, and chlorination.</p> <p>GTAC 3 & 4 - Bear Creek Chemical Site, (OVER 20 sites), Butler and Armstrong Counties, Pennsylvania. <i>Pennsylvania Department of Environmental Protection.</i> Environmental Manager. Responsible for directing sampling and whole effluent toxicity testing of seep from former organic chemical disposal site. Conducted library research on the toxicity of resorcinol and various sulfonic acids on aquatic life and prepared summary report. Directed bench scale treatability testing to stabilize a tarry chemical sludge; prepared report with results and cost estimates for remedial alternatives. Baker provided diverse environmental, engineering, and general technical assistance to the client for this project, involving up to 20 known or suspected related industrial waste disposal sites in two Pennsylvania counties. A variety of hazardous substances were present at the disposal sites and groundwater had been impacted over a large area affecting the water supply for hundreds of residents.</p> <p>Design and Permitting for Surface Facilities of New Freeport Underground Mine, Clarksville, Pennsylvania. <i>Alpha Natural Resources, Inc..</i> Environmental Engineer. Responsible for preliminary design of river water intake and treatment plant. Baker prepared, submitted, and obtained Surface Mining Control and Reclamation Act and National Pollutant Discharge Elimination System permits for the proposed surface facilities associated with the new Freeport Underground Mine. Baker was responsible for the design of the proposed surface facilities, including preparation of the earthwork and grading plan and the design of the foundations for all belt transfer structures, stockpiles, prep plant, clean coal silos, refuse conveyors, clean coal conveyors, and the harbor barge loading facility.</p> <p>Lancashire Number 15 Acid Mine Drainage Treatment Facility Design, Barr Township, Pennsylvania. <i>Pennsylvania Department of Environmental Protection.</i> Project Manager. Responsible for directing team of chemical, environmental, structural, civil, mechanical, and electrical engineers charged with developing plans, technical specifications, and permit applications for a 11 MGD acid mine drainage treatment plant. Responded to RFIs and review submittals by Construction contractor for new AMD Treatment Plant. Baker designed an 11-million-gallon-per-day acid mine drainage treatment plant consisting of extraction wells; a pre-aeration tank; a neutralization tank; a treatment building with laboratory, office, and controls; a sludge conditioning tank; lime and polymer storage and handling systems; a terminal pond; and a sludge injection system. Baker also prepared plans, specifications, and a construction cost estimate and provided bid and construction phase services.</p>			
<p>EDUCATION (Degree, Year, Specialization)</p> <p>M.S., 1982, Civil Engineering; M.S., 1976, Environmental Health; B.S., 1975, Biological Sciences</p>			
<p>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</p> <p>--</p>		<p>REGISTRATION (Type, Year, State)</p> <p>Professional Engineer, 1986, PA; 1996, Ohio</p>	

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
Crowder, Joseph L., P.S. Senior Surveyor	YEARS OF AML DESIGN EXPERIENCE: 12	YEARS OF AML RELATED DESIGN EXPERIENCE: 21	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 6
<p>Brief Explanation of Responsibilities</p> <p>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. He currently oversees all field surveying activities for the Charleston office.</p> <p>WVDEP14387, Harrison County, West Virginia. <i>West Virginia Division of Environmental Protection, Office of AML&R.</i> 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.</p> <p>WVDEP14176, Kanawha County, West Virginia. <i>West Virginia Division of Environmental Protection, Office of AML&R.</i> 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.</p> <p>Water Well Sampling, DuPont, near Washington Works Plant, Wood County, West Virginia. 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.</p> <p>Winfield ACF Site, ACF/U.S. Army Corps of Engineers, Winfield, West Virginia. 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.</p> <p>Poor Charlie, Riverside Site, Glasgow, West Virginia; Poor Charlie, Sattes Site, Nitro, West Virginia; Poor Charlie, Cramer Metals Site, Parkersburg, West Virginia. Work included Boundary, Topographic, Location and Boring Stakeout of various VERA sites and adjoining properties.</p> <p>Elkem Metals Disposal Facility, Elkem Metals, Alloy, West Virginia. Work included Control Network, Boundary, Topographic Surveys, and yearly volume reports.</p> <p>Solutia, Nitro, West Virginia. 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.</p> <p>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</p> <p>Cogentrix Energy, Cogentrix, Marshall County, West Virginia. 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.</p> <p>Big Sandy Peaker Plant, Constellation Power, Cabell County, West Virginia. 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.</p>			
<p>EDUCATION (Degree, Year, Specialization) A.S., 1989, Computer Aided Drafting</p>			
<p>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</p>		<p>REGISTRATION (Type, Year, State) Professional Surveyor, 2000, WV</p>	

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Sarver, Jr., Carl E. Project Manager	<1	21	<1

Brief Explanation of Responsibilities

Mr. Sarver's expertise in mining, geology and chemistry enables him to manage and perform diverse mining as well as environmental related projects. He has personally performed or managed various aspects of mining projects, including designing and/or permitting for underground deep mine expansions and surface support facilities, such as air shafts and portals. Mr. Sarver serves as one of Baker's key personnel in the permitting of underground coal mining and surface operations. In addition to mining related projects, Mr. Sarver has extensive experience in managing and/or performing remediation/construction activities, environmental site investigations/assessments and RCRA facility investigations. His responsibilities have included project and task management, negotiation with local, state, and federal agencies; preparation of plans, work and technical specifications, and investigation work plans; construction management and oversight of subcontractor activities; and preparation of final reports and as built drawings.

Longwall Mine Expansions, Northern West Virginia. Confidential Client. Project and Task Manager. Responsibilities included layout, preparation of permit revisions for underground mine expansion, project budget/schedule, field team oversight, client and WVDEP agency interface. Since 2005, Mr. Sarver has prepared expansion applications and secured permits for expansions at three different Confidential Client mine locations (Bailey, Robinson Run, and the Loveridge Mines). These permits encompass more than 30,000 additional underground acres. A major portion of the work involved inventorying structures and private water supplies overlying the proposed permit area, as well as monitoring surface water. During the oversight of these activities, Mr. Sarver has developed various QA/QC procedures and streamlined data collection. Several of the proposed permit areas included surface water impoundments; in these cases, additional evaluation was required to obtain Mine Safety and Health Administration (MSHA) approval for undermining the impoundments. Additionally, work for these projects involved aiding the client with mine expansion layout, mapping preparation, evaluating subsurface conditions (including hydrologic evaluation, subsidence predictions, rock chemistry, etc.) collecting and compiling environmental data, permit application preparation, and coordinating with the West Virginia Department of Environmental Protection (WVDEP).

MIDC Investigation and Design, Allegheny County, Pennsylvania. U. S. Steel. Task and Project Manager. The MIDC project is a high profile coal tar and waste solidification project directed by U.S Steel (primary PRP) under Consent Order administered by Pennsylvania Department of Environmental Protection (PADEP). Selected remedies included capping of a non-hazardous landfill, consolidating the associated waste, and subsequent capping of a hazardous waste surface impoundment located on an unreclaimed strip mine operation. Responsibilities evolved from a task manager conducting/overseeing soil sampling, analytical and geological data review, and report preparation to the ongoing project manager of this complex multi-phased closure project (total contract value well in excess of \$1,000,000). Mr. Sarver is responsible for providing project budget/schedule and the oversight/direction of a variety of technical staff/disciplines and specialty subcontractors. Work has included development of a suitable coal tar solidification process, geotechnical (including static load tests) and wetland evaluations, lightweight and conventional landfill cap design (and permitting), and preparation of bid documents and engineers cost estimates. Agency interface and negotiations included Allegheny County Health Department (ACHD), Allegheny County Conservation District (ACCD), and PADEP.

Surface Support Facilities, West Virginia. Various Clients. Project and Task Manager. Projects include surface facilities such as airshafts, portals, and borehole installations. Responsible for design oversight, permit preparation, project budget/schedule, and client/WVDEP interface. Baker's role included assisting the client in facility layout/site design, development of grading plans, designing erosion and sedimentation controls, and securing necessary permits (prospecting, IBRs, revisions, etc.). Facilities ranged from simple material handling borehole sites (less than 5 acres) to large complex sites over 40 acres in size. Supporting project work has included wetland and stream delineations, preparing WVDOH HOP permits, and NPDES permitting.

Bailey CRDA No. 5 Permitting. Confidential Client. Environmental Specialist. Responsibilities included agency interaction and preparation of PENNDOT Highway Occupancy Permits for minimum use driveways and culvert crossings under a state highway. Baker provided permitting services for the design of a coal refuse disposal pit at the Company's Bailey Central Mine Complex. Project tasks consisted of revising the company's Pennsylvania Department of Environmental Protection (PADEP) Coal Mining Activity Permit (CMAP) and preparing Dam Permit applications.

EDUCATION (Degree, Year, Specialization)
B.S., 1991, Geology/Chemistry

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Bartos, Kimberly A. Project Manager	5	14	0

Brief Explanation of Responsibilities

Ms. Bartos has managed projects specialized in stream and wetlands impacts, conducting comprehensive field investigations of the environmental conditions of aquatic habitats, providing expertise in assessment for ecological impacts, macroinvertebrate surveys, preparation of comprehensive technical environmental applications for permits in accordance with both state and federal requirements.

She has provided environmental services, ranging from identifying aquatic resources and ecological habitats to assisting with the preparation of the required permits. With specialized environmental services associated mainly with aquatic resources, I have focused on the delineation of wetlands and identification of watercourses associated with Environmental Assessments associated with federal and state projects, Land Development and Public and Private Clean Water Act Violations. I have managed projects ranging from permitting wetland and stream impacts, mitigation of resources - design and construction services for wetland and stream restoration and mitigation projects, conducting environmental assessments and macroinvertebrate surveys and conducting Phase I Environmental Assessments.

She can offer clients creative design options of wetland and stream impacts and mitigation based on my knowledge and unique perspective as an experienced regulator and consultant.

Design and Permitting of a Gas Pipeline. *Confidential Client.* Assistant Project Manager. Responsible for assisting with the permitting and design of the proposed pipeline, including avoidance/minimization of aquatic resources.

Design and Permitting of a Well Pad Access Road. *Confidential Client.* Assistant Project Manager. Responsible for assisting with the permitting and design of the proposed access road, including avoidance/minimization of aquatic resources.

North Sewickley Township Water Authority 2012 Retainer and Miscellaneous Services. *North Sewickley Township.* Environmental Permit Coordinator. Coordinated permit requirements for dam removal.

Restoration of the Canonsburg Lake's Aquatic Ecosystem. *Redevelopment Authority of Washington County.* Assistant Project Manager. Assisted with the permitting and design of the proposed lake maintenance project working with both state and federal agencies.

St. Michael Siding Extension. *Norfolk Southern Corporation.* Environmental Permit Coordinator. Responsible for assisting with the permitting and design of the proposed siding extension, including avoidance/minimization of aquatic resources.

EDUCATION (Degree, Year, Specialization)

B.S., 1999, Biology/Applied Ecology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Society of Wetland Scientists

REGISTRATION (Type, Year, State)

Wetland Certification Training, 2003, PA; Wetland Certification Training, 2012, PA; Rosgen I, Applied Fluvial Geomorphology, 2004
PA DCNR Wild Plant Management Permit, 2012, 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 Init.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Heilman, Gregory A., P.E. Senior Engineer	6	21	0

Brief Explanation of Responsibilities

Mr. Heilman is a civil engineer with extensive professional experience including hydrologic and hydraulic analysis, environmental permitting and engineering, solid and hazardous waste management, and construction services.

Buckeye Reclamation Landfill Superfund Site, Belmont County, Ohio. *Buckeye.* Project Engineer. Responsible for overall site design including developing final grading plans; details; construction sequencing and schedule; and construction cost estimate. Responsible for designing the erosion and sediment control plan and the surface water management plan, which included relocating and lining 5,000 feet of an existing stream. Assisted in the preparation of the final report, technical specifications, Operation and Maintenance Plan, and Construction Quality Assurance (CQA) Plan.

120-Acre Restricted Waste Landfill Gary Works, Indiana. *U.S. Steel.* Project Engineer. Primary responsibilities included coordination of site design, preparation of construction drawings, and preparation of a detailed construction cost estimate. Site design work involved development of grading plans, surface water management, leachate collection system, construction details and sequencing, liner and cover installation.

HWT-2 Neutralized Waste Acid Lagoons Gary Works, Indiana. *U.S. Steel.* Project Engineer. Responsible for all aspects of the permit applications including developing closure concepts; site grading; drainage and erosion control; sludge stabilization; cap and cover design; preparation of drawings and technical specifications; a construction quality assurance plan; and cost estimates. The most recent alternative included groundwater extraction and the design of slurry walls.

Bruce Mansfield Power Station Flue Gas Desulfurization Sludge and Fly Ash. *Pennsylvania Power Company.* Assisted in a feasibility study to evaluate dry disposal alternatives. The project included comparing the alternatives for preliminary costs, technical feasibility and performance to meet all applicable regulations. Involved extensively in sludge dewatering options, the addition of dry additives, dry disposal operations, cost evaluation and screening and comparing of alternatives.

Waste Removal/site Remediation, Carnegie, Pennsylvania. Site Engineer. Managed removal operations for contaminated soil, conducted soil sampling, wrote inspection reports, inspected site backfill, and provided overall supervision of site activities.

Butler Works – Closure of an Existing Sludge Bed, Butler, Pennsylvania. *Armco Advanced Materials Company.* Project Engineer. Performed engineering design for the closure of an existing sludge bed at a hazardous waste surface impoundment. Design included site grading, sludge settlement investigations, impermeable cover design, and storm water control facilities design.

Hennepin Works – Closure of a Solid Waste Disposal Facility, Hennepin, Illinois. *LTV Steel.* Project Engineer. Project engineer for the Prepared of a permit application for the closure of a solid waste disposal facility for LTV Steel Hennepin Works, Hennepin, Illinois. Responsible for the development of the closure and post-closure plans including site grading; final cover design; drainage and erosion control; cost estimates; construction quality assurance plan; technical specifications and design drawings. Responsible for developing conceptual designs and cost estimates for various alternatives for the removal and disposal of 21,000 cubic yards of sludge for the closure of an existing sludge lagoon.

EDUCATION (Degree, Year, Specialization)
B.S., 1988, Civil and Environmental Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)
Professional Engineer, 2007, WV; 1992, PA; 1998, 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:
Perdue, Matthew CAD Designer/Surveyor	27	27	11

Brief Explanation of Responsibilities

Mr. Perdue is a CAD Technician/Surveyor at Baker and has worked in the WVDEP/AML program for many years. Some of the specific projects for which he provided site design, surveying, plan and detail preparation include:

WVDEP14176, Kanawha County, West Virginia. *West Virginia Department of Environmental Protection, Office of AML&R.* 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.

WVDEP 14387, Harrison County, West Virginia. *West Virginia Department of Environmental Protection, Office of AML&R.* Wet mine seals, Dry mine seals, the installation of bat gates, open channel design, culvert design, sediment control design, structure removal and reclamation, grading and revegetation.

WVDEP 14439, McDowell County, West Virginia. *West Virginia Department of Environmental Protection, Office of AML&R.* Wet mine seals, open channel design,, culvert design, underdrains, sediment control design, reclamation grading and revegetation.

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

Elk Creek Portals, Logan County, West Virginia. This project included wet mine seals, dry mine seals, open channel design, site regrade and revegetation.

Delbarton (Curry) Landslide, Mingo County, West Virginia. This project included extensive site grading and drainage design, and a drilled pile retaining wall with concrete lagging.

Coal Hollow Refuse "A," Putnam County, West Virginia. Wet mine seals, dry mine seals, modified bat gates, open channel design, structure removal, site regrade and revegetation.

WVU Tech Drainage, Fayette County, West Virginia. Deep mine dewatering program, wet mine seals, bat gates, open channel design, site grading and revegetation.

Norton-Harding-Jimtown PSD Waterline Extensions, Randolph County, West Virginia. *West Virginia Department of Environmental Protection.* 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.

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

EDUCATION (Degree, Year, Specialization)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Moses, Dana W, P.E., P.H., C.F.M. Mining/Hydraulic Engineer	4	14	0

Brief Explanation of Responsibilities

Mr. Moses is a Registered Professional Engineer 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 Floodplain 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, West Virginia. *West Virginia Department of Environmental Protection, Office of AML&R.* 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, West Virginia. *West Virginia Department of Environmental Protection, Office of AML&R.* 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.

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, Civil Engineering
M.B.A., 2004, Marshall University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineers
American Society of Military Engineers

REGISTRATION (Type, Year, State)

Professional Engineer, 2008, WV
Professional Hydrologist, 2010
Certified Floodplain Manager, 2007

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:
McCrary, Charles, E.I.T. Mining Engineer	9	9	5

Brief Explanation of Responsibilities

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

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

WVDEP14387, Harrison County, West Virginia. *West Virginia Department of Environmental Protection, Office of AML&R.* Wet mine seals, the installation of bat gates, open limestone channel design, culvert and structure design, structure removal and reclamation grading at six (6) sites at the Crooked Run #5 Complex in Harrison County near Clarksburg.

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

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

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

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

EDUCATION (Degree, Year, Specialization)
B.S., 1986, Environmental Conservation

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
American Society of Civil Engineers

REGISTRATION (Type, Year, State)
Engineer-In-Training, 2006, WV

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Hall, Russell E. (Rusty) P.E., P.S. Civil Engineer (Assistant Vice President)	8	28	7

Brief Explanation of Responsibilities

Mr. Hall currently serves as an Assistant Vice President of Michael Baker Jr., Inc., as well as Office Manager of our Charleston, WV office. He is an experienced transportation engineer who has been involved in numerous bridge and highway design projects in West Virginia for over 22 years. His project management responsibilities involve overseeing staff from project inception through completion, and ensuring that the clients' needs and requirements are met. He also has over nine years of office management experience. His office management responsibilities include financial oversight and accountability for a staff of over 40 engineers, scientists, and administrative personnel for Baker's Charleston office. His major strengths include organizing and managing a project team, quality control and quality assurance, and problem resolution. He provides overall direction and maintains direct communications with all clients. Mr. Hall is very proud of the fact that he has been able to spend his entire career in West Virginia working to address West Virginia's transportation needs.

Drainage Improvements and Reclamation Measure Design for Four Abandoned Mine Sites, Kanawha County, West Virginia. *West Virginia Department of Environmental Protection, Office of AML&R.* Principal-In-Charge. Responsible for oversight of Project Management. Baker is providing surveying and mapping, field investigation, subsurface investigation, water testing and sampling, and conceptual, preliminary and final design for the reclamation of four abandoned mine sites that are affected by uncontrolled drainage, debris, and hazards from open portals. Baker is also providing bid phase and construction phase support for the remedial measures.

Engineering Design for Remediation of Crooked Run #5, Harrison County, West Virginia. *West Virginia Department of Environmental Protection, Office of AML&R.* Principal-In-Charge. Responsible for oversight of Project Management. Baker provided engineering services to remediate seven abandoned mine sites along Crooked Run Stream near Clarksburg, West Virginia. Services included field investigation and surveys; core boring and water sampling; conceptual, preliminary, and final design of remediation measures; and bid phase and construction phase support.

Engineering Services to Remediate Landslide Caused by Abandoned Mine Activity, McDowell County, West Virginia. *West Virginia Department of Environmental Protection, Office of AML&R.* Principal-In-Charge. Responsible for oversight of Project Management. Baker provided field investigation, engineering services, and construction support to remediate a landslide on private property caused by drainage from abandoned mine portals. Baker provided conceptual, preliminary, and final design documents for remedial drainage measures and provided support during construction.

Spruce Mine No. 1 Mountaintop Mining EIS, Logan County, West Virginia. *Arch Coal, Inc.* Principal-In-Charge. Responsible for oversight of Project Management. Spruce Mine No. 1 is the first mountaintop-mining project requiring an Environmental Impact Statement (EIS) by the U.S. Army Corps of Engineers (USACE). Baker was responsible for all aspects of the project, including agency and public scoping, and the production of the Draft EIS. Baker analyzed and assessed data and studies that were completed for and included in the SMCRA mine permit application.

Surface Mine Project Baseline Data Collection, Confidential Location, West Virginia. *Confidential Client.* Principal-In-Charge. Responsible for oversight of Project Management. Baker was responsible for conducting baseline data collection and reporting of a Phase I archeological survey, and historic resources view shed analysis. The project produced an approximate five-mile section of line and rough grading, as part of the post-mine land use. This initiative was of tremendous value as an innovative partnership that produces significant savings to the taxpaying public. Typical grade/drain projects in southern West Virginia cost as much as \$25 million per mile, and it was anticipated that this initiative would save as much as \$110 million in the cost to construct embankments for future highway construction.

EDUCATION (Degree, Year, Specialization)

B.S., 1985, Civil Engineering, West Virginia University Institute of Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

Professional Engineer, 1990, WV

Professional Surveyor, 1996, WV

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

HYDROLOGY

SEDCAD4 – Storm Routing through Detention Structures, Channel Design and Riprap Sizing.

TR20 – Project Formulation – Hydrology by SCS

TR55 – 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

Hydroflow Hydrographs – Storm Routing Model

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.

Hydroflow Express – Culverts, Channels, Inlets, and Weir Hydraulics

PIPELINE HYDRAULICS

WATERCAD – Water Distribution System Modeling

KYPIPE2 – Water Distribution System Modeling

CYBERNET – Water Distribution System Modeling

Hydroflow Storm Sewer – Stormwater Conveyance System Modeling

GEOTECHNICAL

Log Draft 5

gINT V8.3

FB-Multi-Pier Version 4.16

Slope/W 2007

Seep/W 2007

UTexas 4

GRL WEAP

L-Pile Versions 4, 5 or 6

COM 624P Version 2

GSTABL7 and STEDwin

GEOTECHNICAL (continued)

FIT Version 8.2

UniSettle, Version 3

DARwin 3.1

Midas GTS

GROUP Version 6

FE Flow 5.3

EMBANK

SPW 911

ProSheet

CRSP

DRIVEN

PASTABL6

RSS

HELP

SURFER

SlopeInc

PCASE 2.09.01

CPET-IT

FOSSA

MSEW

DRAFTING AND SITE DESIGN

AutoCAD – Civil 3D for Earthwork, Survey, Quantity, Calculations, Terrain Modeling, Coordinate Geometry, Site Grading, etc.

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

SURVEY EQUIPMENT

Survey/Global Positioning System (GPS)

- 12 – Leica System 500 - SR 530 RTK - GPS Receiver
- 2 – Leica RS500 Geodetic Reference Station (RTK – COR Station)
- 16 – Pacific Crest ADL Vantage Pro 2-35 Watt UHF – GPS-RTK Trans/Receiver
- 2 – Airlink Raven CDMA C3210 Wireless Modems – Sprint Service, Public Random IP
- 6 – Airlink Raven CDMA C3210 Wireless Modems – Verizon Service, Static IP
- 1 – Leica Disto – Pro (Handheld EDM)
- 32 – Leica Viva GNSS dual frequency receivers
- 3 – Leica 1230 GNSS dual frequency receivers
- 5 – Trimble R8 Model 3 GNSS dual frequency receivers

Pipe/Cable Locators

- 3 – Radio Detection RD4000 with 3 watt transmitters
- 5 – Radio Detection RD8000 with 10 watt transmitters
- 1 – Radio Detection RD7000 with 3 watt transmitter
- 5 – Optical Ranging Inc. Spar 300 locating system integrated with the Trimble R8 receivers

Total Stations

- 1 – Wild TC 2000

Tripods

- 64

Total Stations with Onboard Data Collection

- 1 – Leica TCRP 1200 total station, fully robotic
- 15 – Leica TS 15P total station, fully robotic
- Optical Plummet
- 1 – Wild ZNL-16 (11164)

Magnetic Locators

- 2 – Chicago Steel Tape - FT - 60
- 1 – Schoenstedt
- 6 – Subsurface Instrument – ML-1

Levels (Engineering)

- 9 – Zeiss Ni 2 automatic level with Nedo folding rod
- 1 – Wild N-3 with Nedo folding rod
- 2 – Topcon Dini digital levels with bar code rods
- 6 – Leica NA2 automatic level with 16 ft rod

GPS Antennas

- 12 – Leica AT502
- 1 – Leica AT503 w/Chokering and Ray-Dome
- 1 – Leica AT504 w/Chokering and Ray-Dome
- 32 – Leica GS 15
- 5 – Trimble R8 GNSS

Vehicle / Boats

- 12 – 4 Wheel Drive Suburbans
- 2 – 4 Wheel Drive Jeep
- 1 – 4 Wheel Drive Pickup
- 1 – 8 Wheel Argo – Amphibious ATV
- 3 – Utility Trailers (10' and 14')
- 2 – Yamaha- Quad ATV

Fathometer

- 1 – Innerspace Tech Model 455 – 200 KHz 8° Transducer

Survey Software

- 2 – Leica GIS Data Pro Version 3.0
- 1 – Innerspace Technology Version 6.0 Data Logging with Guidance
- 17 – Leica GeoOffice Version 7.5 and 8.3
- 2 – Trimble Pathfinder Office Version 4.0
- 22 – Listech – Liscad 10.0 (COGO)
- 5 – MicroStation Version V8i and XM
- 2 – Leica SPIDER CORS Controlling Software Version 2.0
- 10 – AutoCAD Civil 3D 2011 and 2014

Field Laptops PCs

- 30 – HP Elite laptop PCs
- 1 Panasonic Model CF19 Tough Book

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

GIS SOFTWARE

ESRI: 4 – ARC/Info, Version 10.X
 9 – ArcView, Version 10.X (6 are Beaver licenses)
 10 – ArcEditor, Version 10.X (6 are Beaver licenses)
 1 – Spatial Analyst
 1 – 3D Analyst
 1 – ArcCOGO

AutoCAD, Version 2014 and prior versions

1 – Visual Basic, Version 6
 1 – Visual Studio 2013 Architects w/MSDN Premium
 1 – Visual Studio 2013 Developers w/MSDN Premium
 1 – Visual Studio 2013 Pro w/MSDN Premium

ARCInfo and ARCEditor are concurrent licenses
 ARCView concurrent licenses

MOBILE LIDAR

Sensor

1 – LYNX Mobile Mapper System with 2 Sensors.

LiDAR Processing WorkStations

3 – HP E5540 2.53 GHz, 18 GB RAM, 1.4 TB of disc space

Servers

1 – HP DL380, 2.1 TB of disc space,
 1 –ATMOS R610 DP Server GBE HA TITAN, 120 TB of disc space

Software

1 – Optech ALTM Navigation-Planner
 1 – Applanix POS PAC
 1 – Optech Dashmap
 6 – TerraSolid TerraScan
 5 – TerraSolid TerraMatch
 6 – TerraSolid TerraModeler
 1 – TerraSolid Terraphoto
 1 – TerraSolid Terraslave
 1 – GeoCue Enterprise Server

5 – GeoCue Client
 5- Geocue LiDAR CuePac
 1-Geocue LYNX MMS CuePac

PHOTOGRAMMETRIC EQUIPMENT

Softcopy Stereoplotters

1 – HP X5670 @ 2.93 GHz Processor X2 (Xeon), 18 GB RAM, 64 BIT Operating System
 1 – HP E5645 @ 2.40 GHz Processor X2 (Xeon), 24 GB RAM, 64 BIT Operating System

Digital Orthophoto

2 – HP Z600 E5640 @ 2.67 GHz Processor X2, 120 GB RAM, 232 GB Disc Space

Scanner

1 – Z/I PhotoScan – Variable Resolution Settings from 7 to 256 microns.

Server

1 – Compaq Proliant DL380
 Xeon 3 GHz Processor
 5.1 GB Memory
 1 Terrabyte Disc Storage

1.2 Terrabyte Network Attached Storage

Software

1 – MrSID, Geo Express 8.5
 1 – ImageStation Automatic Triangulation (ISAT) 6.2
 7 – IRAS – C, Version 10.1
 1 – Adobe Photo Shop 5, Version 10.0
 1 – ERDAS Imagine, Version 2010
 2 – ImageStation Base Rectifier-ISBR, Version 6.2
 3 – ImageStation DTM Collection-ISDC, Version 6.2
 3 – ImageStation Feature Collection (ISFC) 5.3
 3 – ImageStation Model Setup (SMS) 5.3
 2 – ZI Ortho Pro/Geo Media, Version 6.2
 34 – MicroStation – J & 8, Versions V8 and V81
 1 – MRF Mapping Tool Kit for GIS Linework Processing, Version 8.1
 1 – Corporate licensed Axiom Productivity Kit including File Fixer and English to Metric Conversion packages

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
Ebenezer Run Highwall #9 Brooke County, West Virginia	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	Baker's responsibilities included research of existing geological data and mining maps, review of water quality data, check survey, erosion and sedimentation controls, backfilling of existing highwalls to stable configurations, site grading, upgrade of existing access roads, reclamation of onsite spoil and coal refuse, channel design, removal of non-hazardous trash and waste from the site, and revegetation of all disturbed areas. Additional responsibilities were for coordination of the drilling by sub-consultants, water quality sampling and the preparation of the WV NPDES Stormwater Permit.	\$101,413 (Fee) \$1,100,000 (Construction)	80%
Collier Sportsman's Club Highwall Brooke County, West Virginia	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	Baker's responsibilities included research of existing geological data and mining maps, review of water quality data, erosion and sedimentation controls, design of mine seals with bat gate at suspected mine entry, backfilling of existing highwalls to stable configurations, site grading, upgrade of existing access roads, reclamation of onsite spoil and coal refuse, culverts and channel design, removal of non-hazardous trash and waste from the site, and revegetation of all disturbed areas. Additional responsibilities were for coordination of the check survey and drilling by sub-consultants and the preparation of the WV NPDES Stormwater Permit.	\$139,821 (Fee) \$2,500,000 (Construction)	98%

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
Waitman Barbe Highwall #1 Monongalia County, West Virginia	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	Baker's responsibilities included research of existing geological data and mining maps, review of water quality data, erosion and sedimentation controls, design of wet and buried mine seals with bat gates at suspected mine entries, backfilling of existing highwalls to stable configurations, site grading, upgrade of existing access roads, reclamation of onsite spoil and coal, culverts and channel, removal of non-hazardous trash and waste from the site, and revegetation of all disturbed areas. Additional responsibilities were for coordination of the check survey and drilling by sub-consultants and the preparation of the WV NPDES Stormwater Permit.	\$117,007 (Fee) \$1,085,000 (Construction)	95%
Emerald Refuse Area No. 3 Waynesburg, Pennsylvania	Emerald Coal Resources, LP 158 Portal Road, PO Box 1020 Waynesburg, Pa 15370	Prepare permit submission and construction plans for a coal refuse disposal site and slurry impoundment including E&S control, diversion and collection ditches, spillways, staging, and stability analyses.	\$778,279 (Fee)	99%
Currie Landfill and Kelly Farm Sludge Lagoon Remediation Design Millcreek and Fairview Townships, Pennsylvania	Pennsylvania Department of Environmental Protection Rachel Carson State Office Building P.O. Box 8471 400 Market Street Harrisburg, PA 17101	Located within an abandoned strip mine bench, Baker is performing a wetland investigation and delineation at the Currie Landfill site, and is developing construction drawings, technical specifications, and permit documents to construct interim remediation measures for the Currie Landfill site and the Kelly Farm sludge lagoon. Baker's services include project management; subconsultant procurement; wetland site survey, delineation, and jurisdictional determination; development of plans, specifications, and cost estimates; and preparation of permit documentation.	\$1,300,000 (Fee)	99%

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
Phase II Environmental Site Assessment of the Bear Creek Area Chemical Sites Butler and Armstrong Counties, Pennsylvania	Pennsylvania Department of Environmental Protection Rachel Carson State Office Building P.O. Box 8471 400 Market Street Harrisburg, PA 17101	Baker is performing Phase II environmental site assessments (ESA) of several areas of the Bear Creek Area Chemical Site situated within an abandoned strip mine site. Baker's services include project management; mobilization and demobilization of personnel and equipment; site survey and utility coordination; field investigation; test pit excavation and soil sampling; stream, sediment, and seep water sampling; groundwater sampling; investigative-derived waste management; laboratory analysis coordination; data evaluation and validation; and report preparation.	\$806,695 (Fee)	92%
National Pipeline Mapping System GIS Database Repository Services and Digital Data and Map Distribution Nationwide	U.S. Department of Transportation's Research and Special Programs Administration and Office of Pipeline Safety, Washington, D.C.	Baker is maintaining the national geospatial data repository for the National Pipeline Mapping System (NPMS)	\$8,665,361 (Fee)	75%
General Environmental Consulting Services and Technical Support Contract Various Sites in Pennsylvania	Pennsylvania Department of Environmental Resources Harrisburg, Pennsylvania	Services include risk assessments, site investigations, remedial feasibility studies, remedial action design, construction inspection, Health & Safety, storage tank management, and industrial hygiene services	\$9,800,000 (Fee)	95%
Design & Construction Management Services for the Coney Island Water Pollution Control Plant Upgrade New York	City of New York Dept. of Environmental Protection Elmhurst, New York	Baker, in joint venture with another firm, has been providing design, construction management and resident engineering services on a continuous basis since 1979 to upgrade the Coney Island Water Pollution Control Plant. The plant services an area of more than 22 square miles with a population of 690,500 and treats primarily domestic wastewater with some industrial and commercial wastes.	\$30,607,141 (Fee)	98%
TOTAL NUMBER OF PROJECTS:		TOTAL ESTIMATED CONSTRUCTION COSTS:		
9		\$52,315,717 (Fee)		

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

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRM'S RESPONSIBILITY
None					

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)
Simpson Highwall Project, Barbour County, West Virginia	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$119,000 (Fee)	2013	Yes
Prime No. 1 Mine Fetty Portal Monongalia County, West Virginia	Dana Mining 308 Dents Run Road Morgantown, WV 26501	\$103,000 (Fee)	2013	No
Davidson Highwall Project, Preston County, West Virginia	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$107,000 (Fee)	2010	Yes
Fairmont Five Subsidence Marion County, West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$65,659 (Fee)	2010	Yes
Maybeury (Oakley) Landslide McDowell County, West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$54,683 (Fee)	2010	Yes
Wymer Portals Project, Preston County, West Virginia	West Virginia Department of Environmental Protection (WVDEP) Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$123,000 (Fee)	2010	Yes
9 County Roads, Waterline Feasibility Study Preston County, West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$46,361 (Fee)	2009	NA (Study)
Crooked Run #5 Drainage, Refuse and Portals Harrison County, West Virginia	West Virginia Department of Environmental Protection Office of Abandoned Mine Lands & Reclamation 601 57th Street, SE Charleston, WV 25304	\$82,939 (Fee)	2009	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)
Fort Gordon Mine Closure Sites, Fort Gordon, Augusta, Georgia	USACE, New Orleans District P.O. Box 60267 New Orleans, LA 70160-0267	\$110,000 (Fee)	2009	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
General Investigation Feasibility Study, Powell River Basin Lee County, Virginia	US Army Corps of Engineers, Nashville District	\$79,071 (Fee)	2011	N/A (Study)	David Miller & Associates Vienna, Virginia

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

Michael Baker Jr., Inc. (Baker) has been providing abandoned mine lands (AML) reclamation and acid mine drainage (AMD) remediation since the federal government first enacted legislation. Our work experience in AML/AMD started with Operation Scarlift in the 1970's, and we have been providing our engineering services in these areas to the West Virginia Department of Environmental Protection (WVDEP) since they initiated its AML Reclamation Program in 1983. We also provide services in this area to Pennsylvania Department of Environmental Protection (PADEP), Ohio Department of Natural Resources (ODNR), and U.S. Office of Surface Mining (OSM), to name a few. Our recent experience on numerous AML reclamation and AMD remediation projects for the WVDEP, ODNR, PADEP and Nashville District of the U.S. Army Corps of Engineers, illustrates our track record for the completion of assignments on time and within budget. Through these experiences, Baker has garnered AML/AMD-specific recognition and developed long-standing business relationships through successful endeavors based on our ability to provide the following services at a level that meets environmental standards while exceeding client expectations:

- ◆ Reclamation of mine refuse piles
- ◆ Mine Sealing
- ◆ Subsidence Control
- ◆ Balanced earthwork and grading
- ◆ Strip pit and high wall reclamation
- ◆ Drainage conveyance and improvements
- ◆ Revegetation of acid bearing ground
- ◆ Stream relocation and natural stream channel design
- ◆ Wetland assessments and inventory
- ◆ Restoration of streams and wetlands
- ◆ Landslide identification, investigation and remediation
- ◆ Replacement of water supplies affected by mining
- ◆ Passive and active AMD treatment systems



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

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

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

Field Investigation and Design Solutions

Sometimes it is about not reinventing the wheel. Our field investigations start with a literature review of any available mapping, historic mine maps, old aerial photographs, mined out area maps, landslide susceptibility maps, geologic maps, soil conservation service reports, etc. Our specialized experience and technical ability has taught us that a typical AML project is a puzzle with many pieces. Because of the history of the site, often pieces of the puzzle no longer exist. Baker's responsibility is to uncover and connect the various puzzle pieces and utilize this information to develop an efficient, constructible, cost-effective design. We take this responsibility very seriously. The image above is an example of present day aerial photography, historical mine maps, structure contours and field collected data. This becomes a valuable design tool.



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Design Systems – Active and Passive

Baker's design experience includes both active and passive treatment systems, which is based on the characterization of the AMD site as well as the flows and chemistry of the AMD. To this end, Baker provides AMD sampling to determine chemical parameters as well as the flow measurements covering high- and low-flow periods that are most important in developing AMD abatement system. To date, **Baker has evaluated and designed 14 AMD abatement systems**, three of which are passive treatment systems that have been recently constructed and are currently in service.

Additionally, Baker has designed **seven AMD remediation projects for WVDEP** alone that 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 Baker AMD abatement designs have been designed for USACE's Baltimore and Nashville Districts.

Geotechnical Investigation and Analysis

In designing AML reclamation projects, generally three types of soil analysis are needed. These analyses may include:

- ◆ Geotechnical analysis (bearing capacity, friction angle, etc.)
- ◆ Soil analysis for revegetation potential (pH, Acid Base Accounting, Nutrients)
- ◆ Soil analysis for hazardous materials where past dumping may have occurred.

Baker is involved in selecting and collecting the soil samples and analyzing the results of laboratory testing as required for design. Of the 30 most recent AML projects, Baker was involved in soil analysis for 20 projects.



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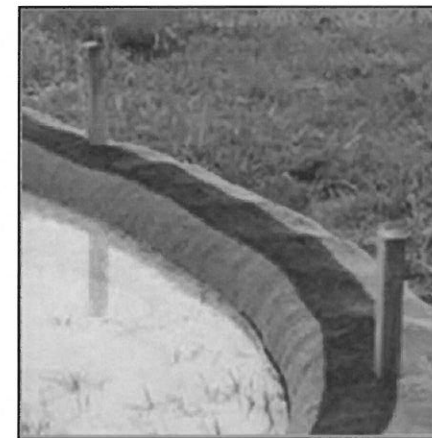
Stormwater Management

Baker applies advancements in sediment control devices to provide an environmentally low impact, cost-effective design for reclamation projects. This approach uses sediment tube traps and wattles in lieu of the conventional sedimentation ponds. These devices filter sediment laden runoff through them while also reducing hydraulic energy. They also provide a higher efficiency of pollutant removal than conventional methods and reduce the project's total disturbed area typically needed when conventional sedimentation basins are utilized. Baker grades the site such that all stormwater runoff is directed towards a channel at the toe of the backfilled highwall which doesn't allow any runoff exiting the site without the benefit of treatment. This keeps all runoff within the limits of disturbance and allows for the erosion control devices to be placed incrementally as construction progresses. Once the site is vegetated, the controls are removed without any further reclamation that typically occurs with traps and ponds. The application of these new technologies also results in lower construction cost and project duration while providing a high efficiency of pollutant removal.

Hydrology and Hydraulic Analysis

Baker has used specialized regional and local hydrologic methods in our 50+ years of combined experience in the program and during our work on local and federal contracts. The team has experts in hydrologic analyses who have experience using a variety of current hydrologic methods, including HEC-1, HEC-2, HEC-RAS, HY8, TR20, TR55, HAESTADS POND2, FLOWMASTER, HDYRDOFLOW, KYPIPE 2, CYBERNET, SEDCAD 4, UNET, and DAMBRK. Baker applies these models 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. The team is also skilled in calibrating the rainfall runoff models in to historical data to justify results. We realize that each watershed is different from the next and that knowledge of local characteristics can be important.

Expertise in hydrology and hydraulics is essential in any AML/AMD remediation design. **Of the 30 most recent AML projects, 27 projects needed hydrology/hydraulics expertise of the AML/AMD design group.**



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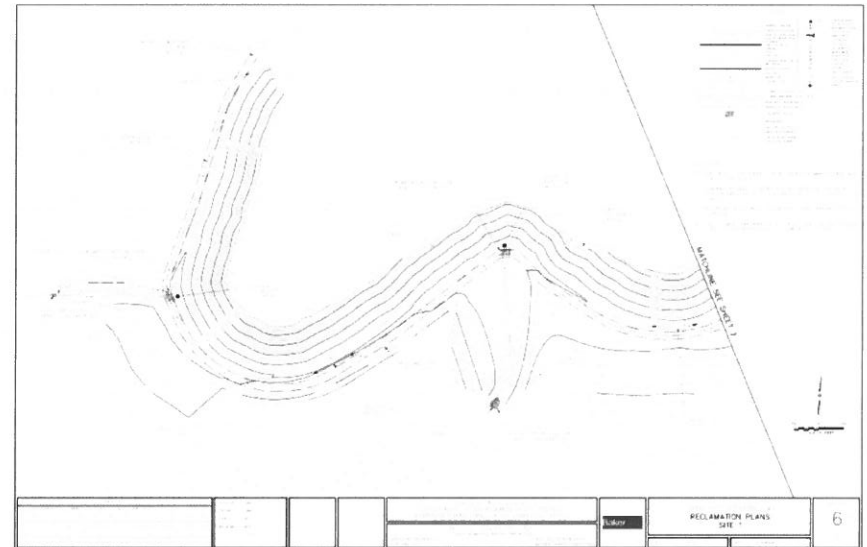
Development of Balanced Earthwork and Grading

Baker typically employs AutoCAD Civil 3D for production of grading plans, profiles, details, cross sections, and balancing cut and fill volumes on AML projects. We have presented a team that includes experts in utilizing this tool for grading and evaluating excavation and fill quantities to produce a balanced AML site. AutoCAD Civil 3D is a powerful tool for abandoned mine land projects allowing the rapid evaluation of grading plan alternatives and calculation of bid item quantities. It is especially useful for projects requiring extensive backfilling and grading, such as required for projects with large refuse and gob piles, highwalls, and other abandoned surface disturbances. If required, Baker is also capable of utilizing Bentley MicroStation for development of plans and earthwork balancing.

Preliminary Design, Final Design, and Construction Documents

Baker's expert team of licensed professional engineers are experienced in preparing preliminary design reports, construction plans, specifications, bid tabs, and cost estimates for projects including mine subsidence and grouting, portal sealing, highwall backfilling, AMD Treatment and landslide stabilization.

Baker was relied upon to write the manual for PADEP for the Permitting for Surface Facilities related to Coal Mining. A manual in which the guidelines are set for all mine permitting to be used by the Operators. This provides for a consistent and methodical process to permit the facilities and ensures the protection of the environment. This trust in Baker by PADEP to take responsibility for this important document is just a sampling of the trust WVDEP has always placed in Baker. It also demonstrates our knowledge of the mining processes and procedure. That understanding of how mining occurs today and historically yields valuable insight into developing solutions to deal with the resulting AML/AMD projects.



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

Permitting

Every design project must be permitted; however the role of permitting is often overlooked. Baker can prepare the required permitting documentation for AML/AMD designs to obtain the required permits and authorizations. Baker has an experienced team of professionals that have a diverse background in environmental and regulatory permitting. Permits are prepared in-house by a team that is intimately involved with the design of the project and has working relationships with regulatory agencies. In many instances, our working relationships with the regulatory community have allowed us to fast-track permits or permit revisions due to unforeseen conditions. This has saved our client valuable time and funding during design and construction. Beyond the application, Baker provides technical representation to support our client's position during the permit negotiations.

Mobile LiDAR Capabilities

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

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

Some of the functions applicable to design projects for which Baker routinely employs the LiDAR System and AutoCAD Civil 3D include:

- ◆ Contour Mapping of the Surface and Subsurface
- ◆ Facilities Layout and Site Design
- ◆ Earthwork Volume Computations and Cost Estimates
- ◆ Drafting of Plans Profiles and Cross Sections



The LiDAR System and AutoCAD Civil 3D Design software are powerful cost saving tools for abandoned mine land projects since they can evaluate numerous configurations rapidly. They are especially useful for projects requiring extensive waterline plan and profile drawings and can interface with hydraulic models such as WaterCAD for analysis and design. They are also useful for projects requiring extensive backfilling and grading, such as may be required for water tank and pump station sites, and for the grading of refuse banks and gob piles, elimination of highwalls, and reclamation of other abandoned surface disturbances.

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

Additional Services

Baker also provides the following services for AML/AMD and water system design projects:

- ◆ Mapping and Aerial Photography
- ◆ Surveying
- ◆ Environmental Evaluations and Assessments
- ◆ Data Acquisition and Interpretation
- ◆ Construction Management

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

The experience of the key project personnel includes abandoned and active mine operations. Since we continually serve many of the Country's largest coal and mineral producers as well as industrial clients and state environmental agencies, several personnel listed under Item 13 of the CCQQ also 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 and reclamation projects (and WVDEP assignments in particular) 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:

- | | |
|-------------------------------|--|
| ◆ Consolidation Coal Company | ◆ Emerald Coal Resources LP |
| ◆ Alpha Natural Resources | ◆ Cumberland Coal Resources LP |
| ◆ Westmoreland Coal Company | ◆ Exxon Research and Engineering Company |
| ◆ U.S. Steel Mining Co., Inc. | |

To further demonstrate Baker's full service capabilities and experience, a national award-winning AML project description is provided as follows:

◆ ***State Funded Mine Reclamation and Pollution Abatement Projects – Kempton Refuse & AMD, West Virginia***

Michael Baker Jr., Inc. was retained by the West Virginia Department of Environmental Protection to prepare detailed design plans, and technical specifications for the Kempton Refuse & AMD project in Tucker County. The constructed project won a reclamation award and is described in a video on the WVDEP website.

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

The primary purpose of the Kempton Refuse & AMD project is to reclaim the remains of the pre-law underground and surface mines in the project area and divert AMD through a passive treatment system before discharging to existing streams in order to rehabilitate the watershed, and in turn the North Branch of the Potomac River.

The project involved the reclamation of over 60 acres of exposed refuse and mine spoil, re-establishment of 4,400 LF of stream, and conveyance and treatment of numerous AMD discharges. Site reconnaissance was performed to identify mine seepage points and AMD sources, subsidence features, and potential soil borrow areas. A wetland delineation and stream assessment were performed to determine design parameters and mitigation requirements for regulatory compliance. A series of bore holes were drilled to determine underground conditions including characteristics of refuse, soil, and rock, and to determine the elevation of critical mine entries.

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

Specifications for revegetation and reforestation of selected areas included soil amendments, seed mixtures, tree plantings, and mulching. Stream restoration designs required to reconstruct two unnamed tributaries in the Potomac watershed employed natural design techniques including a serpentine layout with pools and riffles.

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



Kempton Refuse and Acid Mine Drainage/Abandoned Mine Lands Project in Tucker County, West Virginia. The West Virginia Department of Environmental Protection was honored by the U.S. Department of the Interior's Office of Surface Mining for its reclamation and restoration efforts on the Kempton Project. To find out more about West Virginia's Abandoned Mine Lands Program go to: <http://www.dep.wv.gov/aml/Pages/default.aspx>

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

Summary

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

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

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

1. Bidder Experience

- ◆ Extensive experience in each area. Items 17 and 18 of the CCQQ describe various projects for which we provided these services during the last five years. Projects and technical services listed under item 12 of the CCQQ describe competencies typical of various projects for which we provided our services to WVDEP.
- ◆ Strong capabilities in each area. Item 13 of the CCQQ lists our personnel by discipline. Our large multi-disciplinary staff is experienced in all aspects of water distribution and AML reclamation; civil, environmental, mining, geotechnical and reclamation engineering applied to surface and underground coal mining; land restoration; stream and water restoration; and land use and natural resources planning. The attached "Project Experience Matrix" show various projects performed for various clients and also show primary participants responsible for these projects.

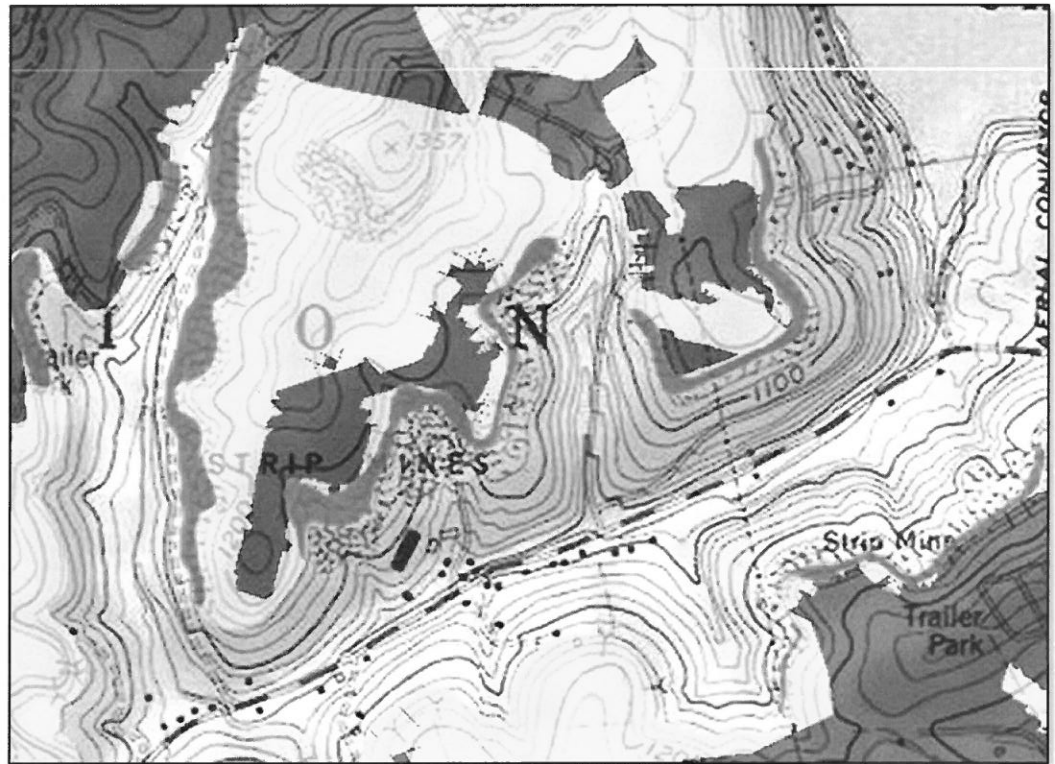
2. Qualification of Personnel with respect to background, general experience, and experience relative to the requirements of the project.

- ◆ Baker's key personnel are registered professional engineers experienced in a broad variety of water distribution and similar projects, as indicated item 13 of the CCQQ.
- ◆ Our Project Professionals are veterans of many similar projects including past WVDEP projects.
- ◆ Our Mining Services Manager, Mr. Christopher Ruppen and our proposed Project Manager for this assignment, Mr. Bill Neider, both demonstrate the desire and commitment that WVDEP deserves and expects for this assignment.
- ◆ The qualifications and experience of Mr. Charlie Stover speak for themselves. His experience in all aspects of AML work is a true benefit to the project and our team. Charlie's intimate knowledge of the Department's goals and objectives, combined with Baker's technical resources, will yield an unsurpassed team that is quality driven.

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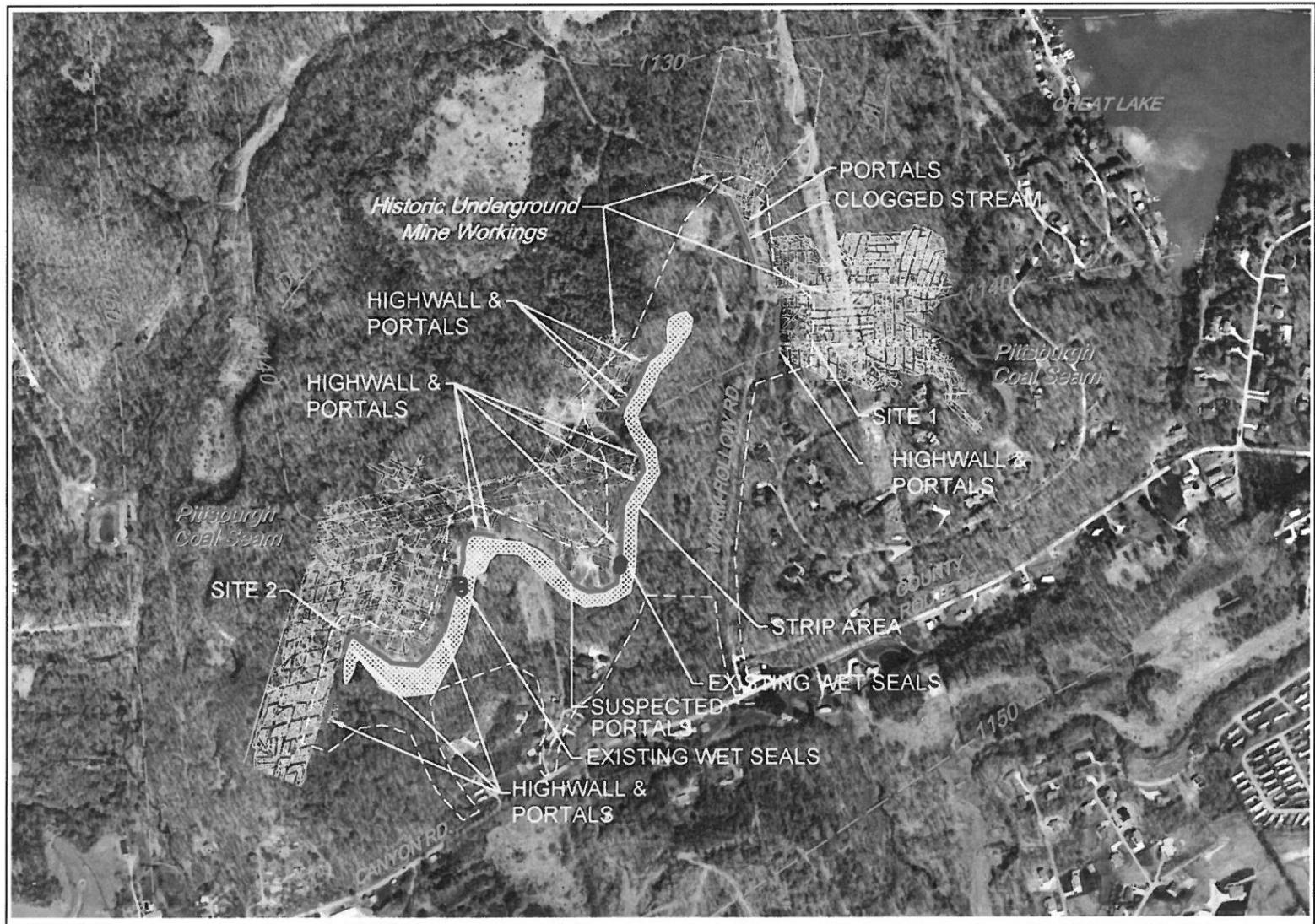
3. Corporate Specialized Experience and Demonstrated Abilities

- ◆ Baker's specialized experience with AML related problems is summarized in the AML and Related Projects Matrix in Appendix C. Our work has addressed the full spectrum of AML projects.
- ◆ 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 often address AML problems.
- ◆ Baker applies advancements in sediment control devices to provide an environmentally low impact, cost-effective design for reclamation projects. This approach uses sediment tube traps and wattles in lieu of the conventional sedimentation ponds. These devices filter sediment laden runoff through them while also reducing hydraulic energy. They also provide a higher efficiency of pollutant removal than conventional methods and reduce the project's total disturbed area typically needed when conventional sedimentation basins are utilized. Baker grades the site such that all stormwater runoff is directed towards a channel at the toe of the backfilled highwall which doesn't allow any runoff exiting the site without the benefit of treatment. This keeps all runoff within the limits of disturbance and allows for the erosion control devices to be placed incrementally as construction progresses. Once the site is vegetated, the controls are removed without any further reclamation that typically occurs with traps and ponds. The application of these new technologies also results in lower construction cost and project duration while providing a high efficiency of pollutant removal.
- ◆ Our specialized experience and technical ability has taught us that a typical AML project is a puzzle with many pieces. Because of the past history of the site, often pieces of the puzzle no longer exist. Baker's responsibility is to uncover and connect the various puzzle pieces and utilize this information to develop an efficient, constructible, and cost-effective design. We take this responsibility very seriously.
- ◆ This image to the right is downloaded from the West Virginia Geologic and Economic Survey and starts to build the puzzle. For the Canyon Refuse and Dump, the reference begins to depict areas of surface mining (pink) which are consistent with the identified highwall and areas of underground mining (black) with headings that are consistent with the identified portals.



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- ◆ Baker routinely finds these puzzle pieces and utilizing various tools, piecing various references together to depict a quick preliminary overview of the project. The image below combines various puzzle pieces for the Canyon Refuse and Dump site and includes the structure contours, mine maps, and aerial imagery. This information becomes a basis for all future work by providing a clear understanding of the history and the current disposition of the site. This tool becomes the foundation for developing a sound and efficient design solution.



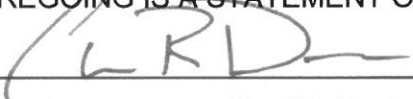
19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Abandoned Mine Lands Program.

By utilizing this reference compilation, several things become quickly apparent:

- ◆ The coal seam involved with this site is the Pittsburgh Seam and it is limited to the ridge tops in this portion of Monongalia County.
- ◆ Because of the proximity of the seam to the ridges, both underground and surface mining has been performed.
- ◆ The project area resides on the eastern limb of a syncline, with the axis positioned in the project area and trending northeast-southwest. Because of the dip to the north and the local structure within the mine, the northern end of the project has a higher possibility of AMD sources.
- ◆ Identified portals in the field tend to align appropriately with mine headings identified on the historic mine maps.
- ◆ Several existing wet seals have been identified indicating possible AMD in the past. This is an interesting occurrence since based on the structure contours, this appears to be the up-dip side of the mine. This will need further evaluation during the investigation phase.
- ◆ Possible portals are situated in the area of clogged stream at Site 1 which could be cause of stream disruption.

This is the type of homework Baker conducts for every AML project and this is what we will deliver for WVDEP.

20. THE FOREGOING IS A STATEMENT OF FACTS

Signature:  Title: Assistant Vice President Date: January 13, 2014
Printed Name: Chad R. Davis, PE

RFQ No. 16434STATE OF WEST VIRGINIA
Purchasing Division**PURCHASING AFFIDAVIT**

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

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

DEFINITIONS:

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

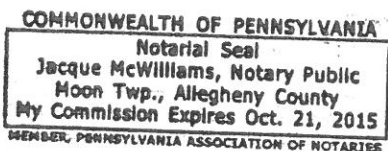
"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers'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

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

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

WITNESS THE FOLLOWING SIGNATURE:Vendor's Name: Michael Baker Jr., Inc.Authorized Signature:  Date: January 10, 2014State of PennsylvaniaCounty of Allegheny, to-wit:Taken, subscribed, and sworn to before me this 10 day of January, 2014My Commission expires October 21, 2015**AFFIX SEAL HERE**

NOTARY PUBLIC

Jacque McWilliams
Purchasing Affidavit (Revised 07/01/2012)

CERTIFICATION AND SIGNATURE PAGE - DEP16434

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Michael Baker Jr., Inc.

(Company)

CRD

(Authorized Signature)

Chad R. Davis, PE, Assistant Vice President

(Representative Name, Title)

412.375.3077

(Phone Number)

724.495.4112

(Fax Number)

January 10, 2014

(Date)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: DEP16434

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|---|--|
| <input type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Michael Baker Jr., Inc.

Company



Authorized Signature

January 10, 2014

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

BAKER AML and RELATED PROJECT EXPERIENCE MATRIX Attachment "C"																																					
Projects	* Exp. Basis C = Corp P = Personal	** Additional Info provided In Sections (s)	Project Experience Requirements														Primary Staff Participation / Capacity *** M = Management P = Professional																				
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal / Shaft Closure	Hydrologic / Hydraulic Design /Eval.	Remining Evaluation	Mine / Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Eval. Mitigation / Replacement	Construction Inspection / Management	Water Treatment	Equipment / Structure Removal	Stream Restoration	Geotechnical / Stability	NPDES/Stormwater Preparation	Primary Staff Participation / Capacity																		
																			Christopher A. Ruppen, P.G. – Mining Service Manager	William D. Neider, P.E. – Project Manager / Lead Civil	John D. Lasko, P.G. – Geotechnical	Edward H. Barefield, P.G. – Geotechnical	John R. (JR) Grimm – Site Design	Michael J. LaMont – Site Design	Brian Chlebus, P.E. – Hydraulics / Hydrology	Michael J. Saylor, E.I.T. – Civil Design	Patrick W. Fogarty, P.E., P.S. – Civil	Scott D. Zang, P.E. – Geotechnical	John A. Callahan, P.G. – Geotechnical	Jason T. Smithson, P.S. – Civil Design	Ronald J. Ciucci, P.E. – Waterlines	James A. Culler, P.E., P.L.S. – Waterlines	George Kay, P.E. – Water Treatment	Joseph L. Crowder, P.S. – Surveying	Carl E. Sarver, Jr. – Geology / Mining	Kimberly A. Bartos – Wetlands / Permitting	Gregory A. Heilman, P.E. – H&H / Civil / Mining
																		M & P	P & M	P	P	P	P	P	M & P	P	P	P	P & M	P	P & M	P	P	P	M		
9 County Roads Water Supply Feasibility Study, Preston County, WV (WVDEP)	C&P	17				*				*	*					*				*								*							*		
Beech Bottom Refuse (WVDEP)	C&P	17	*		*	*				*	*			*	*	*										*											
Borgman Refuse & Portals (WVDEP)	C&P	17	*	*	*	*				*	*		*									*															
Buckeye Reclamation Landfill CERCLA Site (Consol)	C&P	15	*			*				*	*	*	*	*	*	*	*		*				*									*					
Chalk Mountain Mine (The Feldspar Corp)	C&P	17	*			*				*	*			*		*	*	*	*																		
Collier Sportmans Club Highwall (WVDEP)	C&P	15	*		*	*		*		*	*						*	*	*	*	*		*														
Columbia Portland AML Reclamation (ODNR)	C&P		*	*	*	*				*	*					*					*				*												
Crooked Run #5 Drainage, Refuse and Portals (WVDEP)	C&P	17	*	*	*	*				*	*		*	*										*		*		*					*	*	*	*	
Davidson Highwall Project (WVDEP)	C&P	17	*		*	*				*	*		*		*	*			*	*																	
Dennison S.R. 800 AML Reclamation (ODNR)	C&P			*	*	*				*	*			*		*		*			*																
Ebenezer Run Highwall #9 (WVDEP)	C&P	15	*			*				*	*						*	*	*	*		*			*												

[illegible]

BAKER AML and RELATED PROJECT EXPERIENCE MATRIX Attachment "C"																																										
Projects	* Exp. Basis C = Corp P = Personal	** Additional Info provided In Sections (s)	Project Experience Requirements														Primary Staff Participation / Capacity *** M = Management P = Professional																									
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			Christopher A. Ruppen, P.G. – Mining Service Manager	William D. Neider, P.E. – Project Manager / Lead Civil	John D. Lasko, P.G. – Geotechnical	Edward H. Barefield, P.G. – Geotechnical	John R. (JR) Grimm – Site Design	Michael J. LaMont – Site Design	Brian Chlebus, P.E. – Hydraulics / Hydrology	Michael J. Saylor, E.I.T. – Civil Design	Patrick W. Fogarty, P.E., P.S. – Civil	Scott D. Zang, P.E. – Geotechnical	John A. Callahan, P.G. – Geotechnical	Jason T. Smithson, P.S. – Civil Design	Ronald J. Ciucci, P.E. – Waterlines	James A. Culler, P.E., P.L.S. – Waterlines	George Kay, P.E. – Water Treatment	Joseph L. Crowder, P.S. – Surveying	Carl E. Sarver, Jr. – Geology / Mining	Kimberly A. Bartos – Wetlands / Permitting	Gregory A. Heilman, P.E. – H&H / Civil / Mining	Matthew Perdue – CADD / Surveys	Dana W. Moses, P.E., P.H., C.F.M. – Coal / Mining	Charles, McCrady, E.I.T. – Civil Design	Russell E. (Rusty) Hall, P.E., P.S. – Principal																	
No. 4 Reclamation Masontown (WVDEP)	C&P		*	*	*	*				*	*		*	*	*	*			*				*																			
No. 6 Shaft and Dewatering Pipeline (Cumberland Coal Resources LP)	C&P	15			*	*				*	*							*			*	*				*	*															
Powell River Ecosystem Restoration, Ely & Puckett Creek, Virginia (USACE)	C&P	18	*	*	*	*			*	*	*		*		*	*						*			*	*		*														
Ruthbelle Refuse Fire (WVDEP)	C&P		*		*	*		*		*			*		*	*									*	*																
Simpson Creek Tipple and Portals Project (WVDEP)	C&P	17	*		*	*				*	*		*	*	*	*	*		*		*	*																				
Turnhole Branch Reclamation (WVDEP)	C&P			*	*	*	*			*	*																															
Twilight Burning Refuse (WVDEP)	C&P		*	*	*	*		*		*	*		*	*	*	*																										
US Steel RCRA Closure Plan (USS)	C&P					*			*	*	*		*	*		*	*														*		*									
Waitman Barbe Highwall #1 (WVDEP)	C&P	15	*		*	*				*	*					*	*	*	*	*	*	*		*																		
Watson Portals & Refuse Reclamation (WVDEP)	C&P		*	*	*	*				*	*		*	*	*	*					*					*																
Wymer Portals and AMD (WVDEP)	C&P	17	*		*	*				*	*		*	*	*	*	*			*																						

* List whether project experience is corporate or personnel based or both.

** Use this area to provide specific sections or pages if needed for reference.

*** List Primary Design personnel and their functional capacity for the projects listed.