Hatch Mott MacDonald

Expression of Interest
for
Professional Engineering Services
at the
Burnwell (Standard/Paint Creek/Collinsdale) Waterline Extension

RFQ # DEP14383

West Virginia
dep department of environmental protection

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

Request for Quotation

RFQ NUMBER	PAGE
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ADDRESS CORRESPONDENCE TO ATTENTION OF:
CHUCK BOWMAN
304-558-2157

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE

Hatch Mott MacDonald
2601 Cranberry Square
Morgantown, WV 26508

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

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
09/04/2008				

BID OPENING DATE: 10/08/2008 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-94		

STANDARD/PAINT CK/COLLINSDALE WATERLINE 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 STANDARD/PAINT CREEK/COLLINSDALE WATERLINE EXTENSION PROJECT IN KANAWHA/FAYETTE COUNTIES, WV PER THE FOLLOWING BID REQUIREMENTS AND THE ATTACHED SPECIFICATIONS.

BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID AND IS TERMINATED WITHOUT FURTHER ORDER.

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
[signature]	304-212-4390	10-8-08

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Area Manager	16-1006700	

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

RFQ No. DEP14383

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

VENDOR OWING A DEBT TO THE STATE:
West Virginia Code §5A-3-10a provides that: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:
West Virginia Code §21-1D-5 provides that: Any solicitation for a public improvement construction contract shall require each vendor that submits a bid for the work to submit at the same time an affidavit that the vendor has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code. A public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the West Virginia Code may take place before their work on the public improvement is begun.

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

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

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

CONFIDENTIALITY:
The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendors should visit **www.state.wv.us/admin/purchase/privacy** for the Notice of Agency Confidentiality Policies.

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

Vendor's Name: Hatch Mott MacDonald

Authorized Signature: _____ Date: 10-8-08

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Hatch Mott MacDonald

2601 Cranberry Square
Morgantown, WV 26508
T 304.212.4390 F 304. 594.2814
www.hatchmott.com

October 8, 2008

Mr. Chuck Bowman, Buyer
West Virginia Department of Environmental Protection
Purchasing Division
2019 Washington Street, East
P.O. Box 50130
Charleston, WV 25205-0130

RE: RFQ # DEP 14383
Expression of Interest
Burnwell (Standard/Paint Creek/Collinsdale) Waterline Extension

Dear Mr. Bowman:

Hatch Mott MacDonald (HMM) is pleased to submit this proposal to provide design and mapping services for the West Virginia Abandoned Mine Lands and Reclamation Program. This project's focus on water line design and related services is a principal area of expertise within our firm.

With a lineage stretching back over a century; involvement in the design and construction of the most ambitious infrastructure projects; and a multi-disciplined staff with comprehensive engineering skills, HMM possesses the practical knowledge and experience needed to meet the technical challenges of any given project. Our approach is strictly client-focused – with a corporate commitment to engineering excellence, HMM provides services for all aspects of engineering projects, from feasibility studies and surveys through design, to project and program management, construction management and supervision, start-up and operations.

HMM has targeted West Virginia, and specifically the Abandoned Mine Lands discipline as a strategic area of focus for our business. In order to provide an exceptional service and product, we have hired veteran staff with significant or extensive experience with the Abandoned Mine Lands Program. Our Morgantown office has several staff members that collectively have more than 60 years of direct design and management experience with AML design projects of all kinds with numerous state programs including WVDEP. These staff members have worked together on AML designs and mining related issues continuously for the past 15 years and have collaborated to produce numerous award-winning projects including an Office of Surface Mining national award several years ago.

In addition, HMM recently hired Jim Fetty to our water/wastewater group. Mr. Fetty is a Registered Professional Engineer in West Virginia with 25 years of direct municipal engineering experience, most recently as the City Engineer of Fairmont, WV.

This Expression of Interest submittal relates specifically to water design capabilities, a core competency of HMM. We have completed water projects of this description across the country with projects into the millions of dollars. Our many years of infrastructure design has provided considerable water system design experience available from throughout the company for this project. A variety of project briefs have been included in this submittal to demonstrate how HMM has successfully completed projects similar to this project as well as larger and more complex water-related projects.

Having successfully completed projects across a wide range of sizes and complexities has demonstrated that we have the experience to provide the appropriate project management approach to each of our projects. HMM corporately maintains a strong QA/QC philosophy for all the work we do illustrated by the fact that we are ISO 9001:2000 certified.

HMM opened its Morgantown office in 2006 and already has a total staff of over 32 people. Our in-house capabilities include civil, water/wastewater, mechanical, and mining engineers, CAD designers, geologists, environmental scientists, biologists, and other field staff. This office is strategically located to be able to easily service this project. In addition to HMM's highly qualified staff, we have invested significant resources to make state-of-art technology and tools available to our staff. We have over 15 Trimble GPS units that are used by our field staff on a regular basis to support other clients. We have also invested in the large format plotters and scanners to give our staff cutting edge technology to support all of our projects and to provide the highest quality deliverables possible.

We appreciate the opportunity to submit this expression of interest and look forward to establishing a successful working relationship. Please contact myself or another member of our staff with any additional questions you may have.

Very truly yours,

Hatch Mott MacDonald

Richard L. Steinhart, PE
Vice President
T 412.497.2910 F 412.497.2940
richard.steinhart@hatchmott.com

Timothy M. Rice
Senior Project Manager
T 304.212.4388 F 304.594.2814
timothy.rice@hatchomott.com

[corporate history & experience]

INTRODUCTION

With a lineage stretching back over a century, involvement in the design and construction of the most ambitious infrastructure projects and a multi-disciplined staff with comprehensive engineering skills, Hatch Mott MacDonald (HMM) possesses the practical knowledge and experience needed to meet the technical challenges of any given project. Our approach is strictly client-focused – with a corporate commitment to engineering excellence. HMM provides services for all aspects of engineering projects, from feasibility studies and surveys through design, to project and program management, construction management and supervision, start-up and operations.

LOCAL OFFICES

HMM is headquartered in Millburn, New Jersey and has many offices throughout North America. Regionally, our offices are located at:

2601 Cranberry Square
Morgantown, WV 26508
T 304.212.4390
F 304.594.2814

Gateway View Plaza
1600 West Carson Street
Pittsburgh, PA 15219
T 412.497.2900
F 412.497-2901

18013 Cleveland Pkwy Dr.
Suite 200
Cleveland, OH 44135-3233
T 216.535.3640
F 216.265.2816

CONSULTING AREAS

The resources of HMM are available through the following consulting areas:

- Construction Engineering Services
- Contract Operations
- Environmental Compliance & Remediation
- Environmental Site Assessment & Remediation
- Geographical Information Systems
- Hazardous Waste Management
- Hydraulic Infrastructure Evaluation & Rehabilitation
- Hydrogeological Services
- Industrial Wastewater Management
- Information Technology & Management
- Mining Environmental Services
- Municipal Engineering and Planning
- Pipeline Services
- Rails-To-Trails Projects
- Recreational Facilities
- Recycling/Solid Waste Management
- Site Development Engineering
- Storage Tank Management
- Stormwater & Watershed Management
- Transportation Engineering
- Wastewater Engineering and Management
- Water Supply Management
- Wetland / Ecological Studies

STAFFING

Hatch Mott MacDonald was formed as a joint venture between Hatch Associates of Canada, a leading design engineering firm, and Mott MacDonald, headquartered in London, an infrastructure and education consulting engineering firm. The combined resources of Hatch Associates and Mott MacDonald offer a worldwide engineering staff of about 20,000 people. In 2001, HMM acquired the environmental consulting firm of Killam Associates to offer water, wastewater and environmental services throughout North America. Our total US staff is now over 1,800 engineers, scientists and technical support personnel.

MANAGEMENT STRATEGIES

HMM uses the "Project Team" approach to efficiently manage and complete projects on time and within specified budgets. A Project Manager directs the team and interfaces with the client to ensure an uninterrupted flow of information. Capable managers draw upon the versatile personnel at HMM to provide pertinent technical knowledge relative to a particular project.

Hatch Mott MacDonald's engineering professionals are fully supported by extensive computer resources (CADD, graphics, and an Information Technology staff), and highly trained field crews for surveying and environmental sampling and monitoring.

From the analysis stage to project implementation, the professional staff of HMM provides clients with cost-effective engineering and planning solutions for their environmental problems. HMM's outstanding reputation is based upon dedicated service to clients and demonstrated technical abilities.

Hatch Mott MacDonald is proud of its established reputation, which is based on efficient project management, technical expertise, and knowledge of regulatory requirements. These features are reflected in HMM's success at maintaining long-term client relationships. Experienced staff and an organizational approach make HMM extremely competent in meeting a client's needs, now and in the future.

The Morgantown office is staffed to provide six different design teams simultaneously. These teams generally consist of a Project Engineer and the necessary design drafting and support staff.

EXPERIENCE AND QUALIFICATIONS

Hatch Mott MacDonald (HMM) is a full-service consulting engineering firm offering both public and private clients a complete range of services from conceptual, feasibility/ planning studies and environmental assessment through preliminary and detailed design to procurement, construction engineering inspection and project and construction management services, as well as operations and maintenance. Headquartered in New Jersey, HMM has

hundreds of staff located in the northeast and Mid-Atlantic regions. Over 1,800 employees in 56 offices throughout the U.S. and Canada will support the local staff. This project will be performed from our Morgantown, WV office.

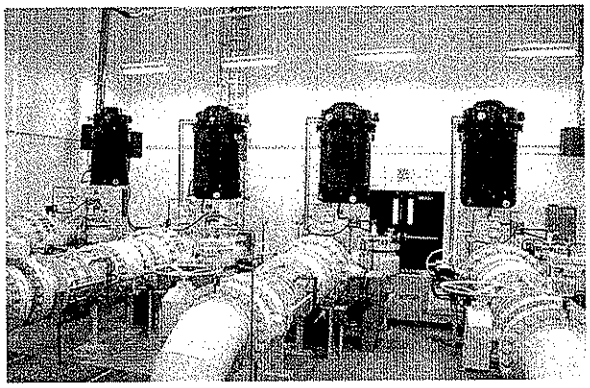
Our resources and experience in the Mid-Atlantic Region have been steadily growing in the past few years. Presently we have substantial water and wastewater projects in progress for several of the major utility companies.

Water transmission and distribution main design has been a mainstay of HMM's business for 70 years. Our project team includes staff that has collectively designed hundreds of miles of water mains. These projects range from routine small diameter distribution mains to highly challenging and complex assignments. For example, HMM is presently about 70% complete with the design of a new 72-inch diameter water transmission main that will cross below the New York Harbor, a distance of nearly two miles.

Our record of repeat business from major clients is a testament to their recognition of our competence in water main design. For example, we have been designing pipelines for American Water, the largest investor-owned utility in the US, for over 20 years. In just the past two years, we have designed approximately 150,000 linear feet of water mains and sewers for American Water, and have completed route assessments and alternatives analyses for another 50,000 feet of water mains. Several years ago, American Water selected HMM to design a 36-inch diameter horizontal directional drill crossing of the Missouri River that was, at the time, one of the longest such crossings ever built. HMM's technical competence was the reason why American selected us for this challenge, even though we had no offices in or near Missouri, and American had previously used consultants with local offices for more routine work in their Missouri systems.

Water Supply Management

HMM has demonstrated a unique combination of talent and experience in meeting hydraulic and water supply engineering challenges for over 60 years. The firm has demonstrated particular strength and developed broad experience in water system planning, hydraulic analysis, design, rehabilitation and implementation. We can provide a full range of water supply management services including hydraulic analyses, planning and feasibility studies, preliminary and final designs, preparation of contract drawings and specifications, construction cost estimates, time schedule outlines, bid analyses, complete resident engineering services during project construction and development of operation and maintenance manuals, as well as start-up assistance and operator training.

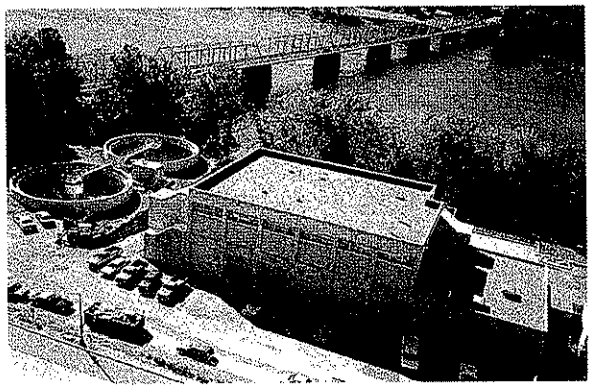


Planning

- Master Planning for Water Supply & Treatment
- Resource Management
- Resource Inventories
- Grant & Loan Application Assistance

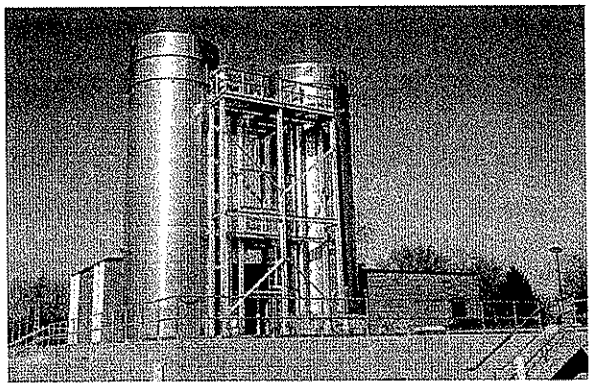
Construction Services

- Field Services
- Liaison Representation
- Construction Management
- Contract Administration



Investigative Studies

- Hydraulic Analysis
- System Pressure & Fire Flow Analysis
- Water Quality Treatability
- Rate Studies
- Feasibility Studies
- Valuations
- Expert Testimony



Design

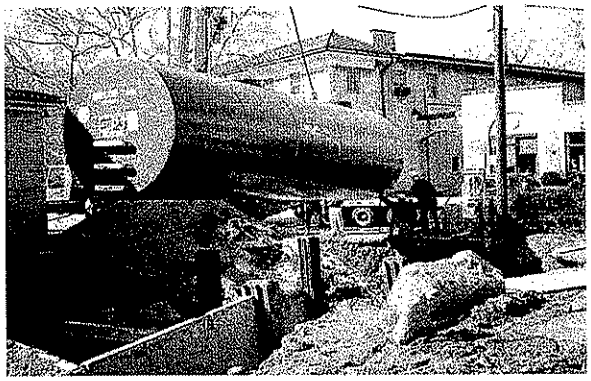
- Water Supply
- Water Treatment
- Air Stripping
- Pumping Stations
- Transmission & Distribution Pipelines
- Storage Facilities
- Rehabilitation
- Treatment Plant Optimization & Management

Storage Tank Management

HMM provides storage tank management through a highly trained staff of professional geologists and engineers. This staff can investigate, analyze and make recommendations to our clients on tank management plans, tank upgrades and/or new tank designs. All staff are familiar with current state and USEPA rules and regulations and can expertly assist our clients in compliance with current standards. Our design team is experienced in double-walled steel or fiberglass tanks as well as tank upgrades in compliance with the regulations.

Evaluation of Existing Tank Systems

- Registration, Permitting & Release Reporting
- Integrity Testing
- Abandonment In-Place
- Removals & Disposals
- Upgrades & Modifications per Federal Regulations

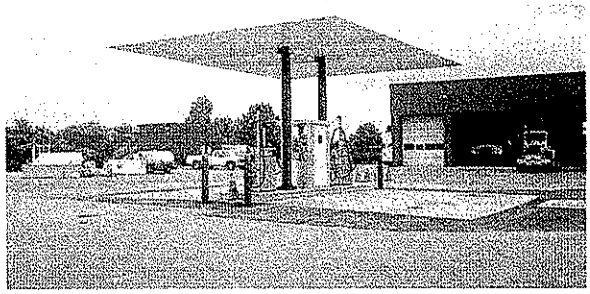


Design of New Tank Systems

- Corrosion Protection Systems
- Double-Wall Steel to 20,000 Gallons
- Fiberglass to 6,000 Gallons
- Vault or Below Ground Installations
- Above Ground Concrete
- Dispensing Units for Motor Fuel
- Multi-fuel Tank Partitioning for Gas & Diesel
- Instrumented Leak Detection Systems
- Canopies & Islands
- Specialized #6 Heating Oil Design
- Specialized Aviation Gasoline Designs
- Bid Plans & Specifications
- State & Local Construction Code Permitting
- Construction Management
- System Start-up
- Fuel & Fleet Management Systems

Tank Management Plans

- Evaluation of Existing Systems through Data Searches, Interview & Site Surveys
- Determination of Compliance/Non Compliance with Federal/State Regulations
- Determination of Future System Needs
- Determination of Tank Upgradability
- Scheduling Removals/Abandonment/ Replacements
- Cost Estimating
- Recommendation of Sequenced Compliance

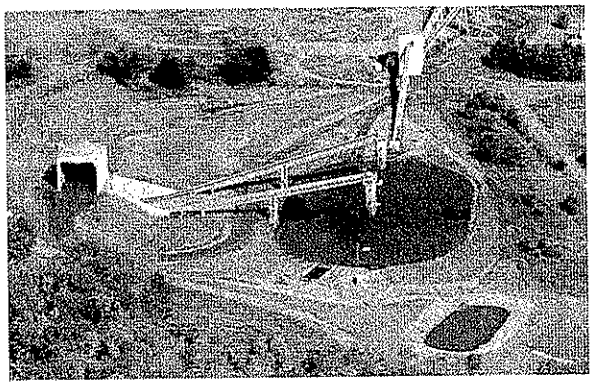


Municipal Engineering Services/ Public Works Management

As a result of the practical experience developed during more than six decades of engineering consultation, and through the utilization of the talents of staff experienced in engineering, planning and public works management, HMM can draw upon a vast depth of resources to provide consulting services for its public clients, particularly in the Public Works Area. HMM's multiple office locations, coupled with the diverse capabilities of the firm's experienced staff of certified public works managers, allow HMM to provide the Public Works Management service needed to meet the full range of the day-to-day demands of local government.

Master Planning, Design, Budget & Implementation

- Municipal Improvements
- Drainage & Flood Control Facilities
- Wastewater Collection, Pumping & Treatment Facilities
- Roadway Construction, Resurfacing & Reconstruction
- Intersection & Signalization Improvements
- Water Supply Treatment, Storage & Distribution Systems
- Beach Erosion Control, Marine & Coastal
- Structures & Flood Zone Management
- Parks, Golf Courses & other Recreational Facilities
- Solid Waste Management & Recycling
- Building Design Services
- Land Surveying
- Tax Map Revisions & Street Address Map Revisions
- Energy Audits



Advisory Consultation

- Governing Body
- Planning Board
- Board of Adjustment
- Board of Health
- Liaison to Municipal Departments, Boards & Commissions
- Liaison to County, State & Federal Agencies
- Liaison to Financial Institutions
- Liaison to Legal Division & Expert Testimony
- Public Participation Programs

Public Works Consultation

- Underground Storage Tanks
- Sewage Collection, Pumping & Treatment Facilities
- Water Distribution, Supply, Storage, Treatment & Pumping Facilities
- Streets & Roads
- Stormwater Collection, Detention & Retention Facilities
- Solid Waste & Recycling
- Vehicles & Equipment
- Snow & Ice Removal
- Emergency - Crisis Planning
- Complaint Processing
- Construction Phase Engineering
- Survey
- GPS/GIS Plans

Parks & Recreation

- Capital Inventory
- Park Maintenance Program
- Field Utilization Surveys

Municipal Engineering Services/ Public Works Management (cont.)

Street Management Program

- Pavement Management Programs
- Maintenance & Repair Programs
- Preparation of Street Cleaning Programs

Snow Plowing and Ice Control

- Comprehensive Snow Plowing Plans
- Ice Control Programs
- Equipment

Stormwater System Maintenance

- Cleaning Programs
- Routing Maintenance Programs
- Planning for Managing & Upgrading

Sanitary Sewer System Maintenance

- Routine Cleaning Programs
- TV Inspection
- Manpower Training

Fleet Management

- Planning that Addresses Ownership, Use, Maintenance, Repair & Replacement

Facility Management Programs

- Review Staff Capabilities Relative to Facility Maintenance, Upkeep & Cleaning

Capital Budgeting and Planning

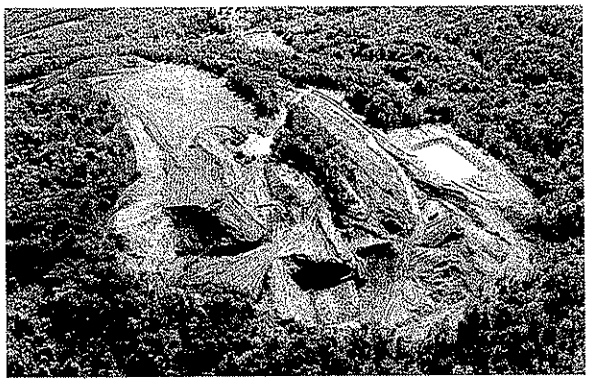
- Review of Existing Capital Plans
- Preparation of Single or Multi-Year Capital Budgets
- Review of Financing Options

Public Works Management

- Perform Management Review of Existing Operations
- Prepare Plans for Staffing & Operational Improvements
- Budget Review & Recommendations

Mining Environmental Services

HMM offers a full spectrum of mining and mining-related environmental and design engineering services. Successfully completed projects range from reserve analyses, permitting and feasibility studies to complex mining and reclamation plans for surface and underground mining installation, prep plants and refuse handling facilities. Versatility is demonstrated by proven ability to work with large and small operators. Personnel are accustomed to communicating effectively with both multi-department international companies and sole proprietors.



Surface Mining

- Surface Mining Permits
- Auger Mining Permits
- Feasibility Studies
- Land Reclamation & Remediation
- Permit Transfers
- Pre-Blast Surveys
- Acid Mine Discharge (AMD) Remediation

Underground Mining

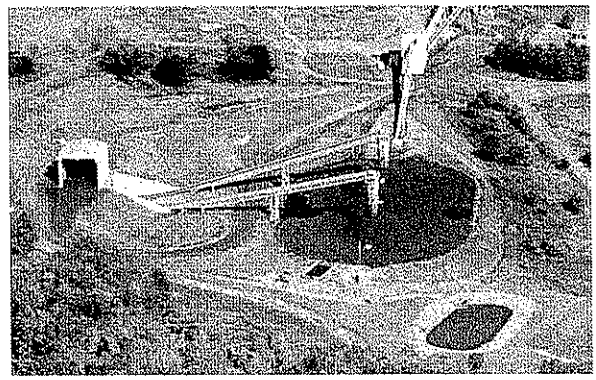
- Deep Mine Permits
- Mine Design & Mapping
- Ventilation Plans
- Subsidence Plans
- Surface Support Plans
- Air Shaft Design & Coordination
- Incidental Boundary Revisions (IBR)
- Pre-Subsidence Surveys

Support Facilities

- Preparation Plant Permits
- Coal Yard & Loadout Permits
- Refuse Pile Reprocessing Permits
- Site Planning
- Air Quality Permits
- Coal Refuse/Fly Ash Permits
- Coal Refuse/Fresh Water Impoundments
- Portal Facilities Design & Construction Management

Mine Planning

- Geological Exploration
- Reserve Studies
- Economic Evaluations
- Aerial Mapping
- Drilling
- Environmental Site Assessment



Professional Surveying

- Underground Coal Mine Surveys
- Stockpile Volumetric Surveys
- Construction Surveys
- Boundary Retracement
- Topographic Surveys
- Horizontal & Vertical Control Networks
- GIS/GPS Surveys

Operations Support

- Small Operator Assistance Program (SOAP) Preparation
- Thermal-graphic Equipment Analyses
- Machine & Equipment Appraisal & Analyses
- Conveyor System Analyses
- Electrical System Analyses

Ecological Services

Hatch Mott MacDonald provides a wide range of scientific and environmental expertise needed to successfully address complex environmental problems and to design practical, cost-effective solutions. HMM is committed to assisting its clients by guiding projects through both the regulatory process and the construction phase utilizing cost effective design and engineering while protecting and enhancing the environment. We have provided ecological services to many types of clients including public and private utilities, state and municipal authorities and agencies, commercial site developers, energy companies, residential and other private property owners, municipalities and institutions. Our scientists and field technicians have the necessary technical expertise required to design and execute ecologically-focused surveys and studies and the capability to set a strategic course of action for projects to be successfully licensed and permitted at all regulatory levels.

Regulatory Compliance

- Agency Consultation and Coordination
- Ecological Resources Policy Development
- Environmental Audits
- Environmental Compliance Inspection
- Environmental Impact Statements and Assessments
- Environmental Monitoring
- Environmental Risk Assessment
- Expert Testimony and Litigation Support
- Federal, State and Local Permitting

Environmental Technology

- Bioengineering
- Bioremediation and Phytoremediation
- Engineered Wetlands for Water Treatment
- Ecological Restoration

Ecological Resource Surveys/Studies

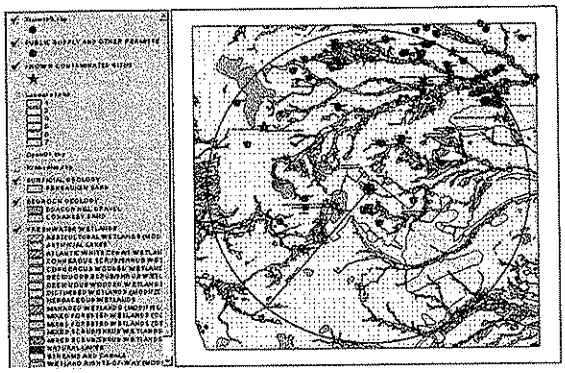
- Biota and Ecosystem Baseline Surveys
- Ecological Resource Management
- Ecological Risk Assessment
- Habitat Evaluation and Assessment
- Rare, Threatened and Endangered Species Assessment
- Soils, Sediments and Water Quality Investigations
- Wetland Delineation and Assessment
- Wetland Mitigation, Replication and Monitoring

Other Related Services

- Erosion and Sedimentation Control Plans
- GPS Survey
- GIS Applications
- Stormwater Management Plans
- Vegetation Management Plans
- Landscape Planting Plans

Geographic Information Systems

Over the last decade, HMM has responded to its clients' growing needs for Geographical Information System (GIS) through investments in software, hardware and employee training. The ability of GIS to integrate central databases with mapping that can be shared throughout an organization, is making this information technology a standard for government agencies, utilities and private companies. HMM provides a full range of GIS services in the areas of: water/wastewater utility, stormwater utility, municipal government, hydrology and hydraulics, and natural resources.

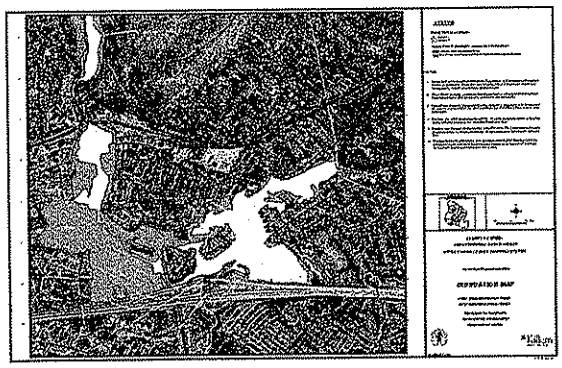


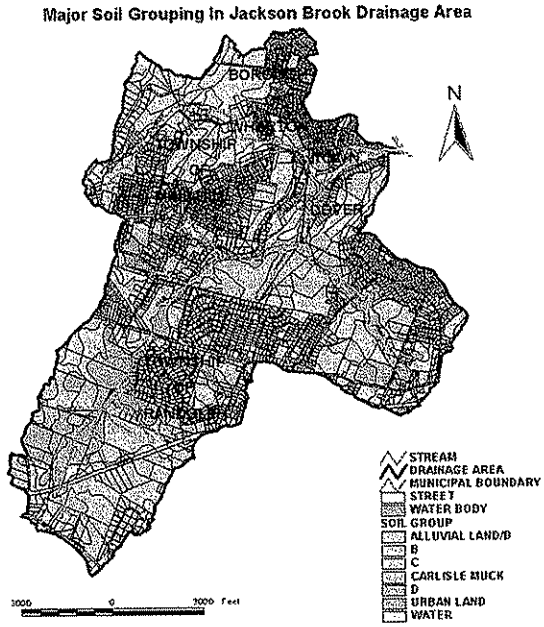
Software Capabilities

- Infrastructure Modeling
- Document Management
- Hydrologic/Hydraulic Modeling
- Groundwater Modeling
- Coordinate Geometry (COGO)
- Geographical Positioning Systems (GPS)
- Digital Elevation/Terrain Modeling
- Integration of Third Party Modeling Software
- Internet/Intranet

Software Applications

- ARC/INFO©
- ArcView©
- ArcCAD
- ArcFM
- AutoCAD/AutoCAD Map
- Microstation



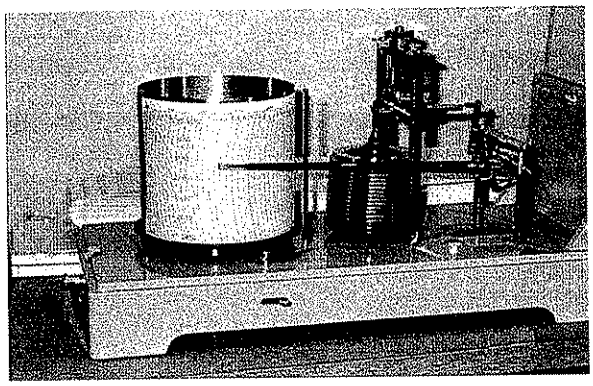


Hardware Resources

- Hewlett-Packard 1055 & 755 Design Jet Plotters
- Dell Precision Workstation (750 MHz Processors with 256K RAM)
- Network through a 6300 Dell PowerEdge Server
- RAID-5 Array for Data Storage
- XEROX 8830 Scanners & Printers

Hydrogeological Services

HMM's hydrogeological specialists are employed on a wide range of projects, from small urban properties to entire watersheds. The majority of our staff holds advanced degrees and are registered professionals. They evaluate and develop groundwater resources; delineate contamination and predict impacts on human and ecological receptors; provide the technical basis for the design of subsurface wastewater disposal, construction dewatering and aquifer remediation systems; generate hydrogeologic models, frame computer simulations and perform statistical analyses for risk assessments and resource prospecting; provide full technical assistance in permitting in all these areas; provide peer review for the work of outside hydrogeologists; advise legal counsel and provide expert testimony.



Groundwater Resources

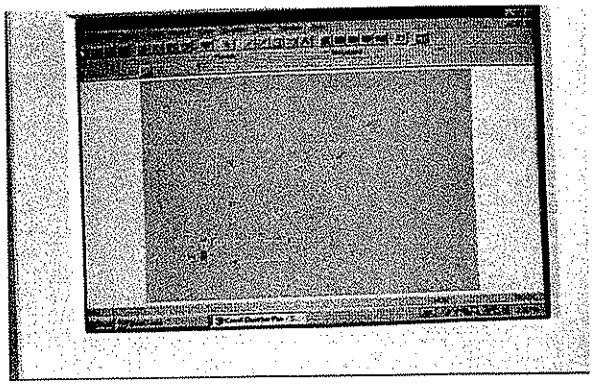
- Resource Evaluations
- Water Allocation Permits
- Well-Head Protection Area Delineation
- Diversion Impact Assessments

Dewatering

- Dewatering System Design
- Temporary Water Allocation Permits
- Dewatering Permits-by-Rule

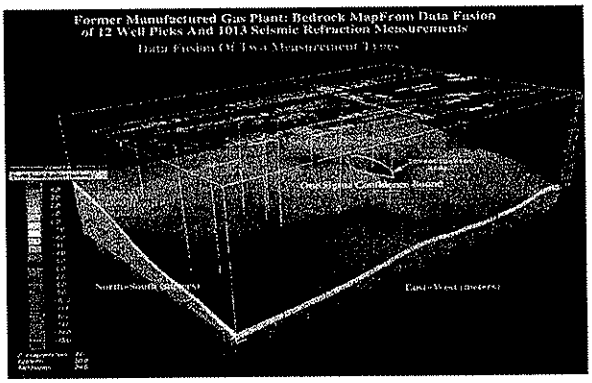
Discharge to Groundwater

- Hydraulic Mounding Analysis
- Discharge to Groundwater Permits
- Dilution Modeling



Remedial Design

- Plume Control
- Treated Wastewater Disposal System Design
- Contaminant Fate & Transport Modeling
- Technical Support for Natural Remediation
- Aquifer Reclassification
- Ground Water Chemistry
- Expert Testimony
- Peer Review



Landfill Investigations

- Leachate Generation & Control Modeling
- Landfill Gas Venting System Design
- Aquifer Impact Assessments

Aquifer Investigations

- Pumping Test Design & Analysis
- Aquifer Modeling
- Simulation of Groundwater Flow
- Aquifer/Surface Water Interaction Analyses

Environmental Site Assessment and Remediation

For nearly two decades, HMM has performed Phase I/Phase II environmental site assessments at hundreds of sites. They have consulted with multi-national and local buyers of property, assisting them with their due diligence efforts prior to acquisition of new companies or properties. On properties where contamination is present in excess of acceptable levels, HMM has designed and implemented remediation measures. Such remediation projects have been completed under a variety of environmental programs, including CERCLA (Superfund), RCRA Corrective Action, ISRA, Pennsylvania Act 2 and other state Brownfield programs. Projects have been completed on numerous sites that have soil and/or groundwater contaminated with chlorinated solvents, petroleum from leaking storage tanks, heavy metals, PCBs, and other organic compounds. Our design engineers are specialists in groundwater collection and treatment, waste removal and facility closure design, and our field staff is fully equipped and instrumented, and appropriately trained and medically monitored.

Environmental Site Assessments

- Phase I Site Assessments (ASTM)
- Transaction Screening Assessments
- Phase II Site Investigations
- Geophysical Surveys
- Monitoring Well Installations/Borings
- Soil, Air & Water Sampling
- Waste Sampling & Characterization
- Groundwater Flow Modeling
- Contaminant Transport Modeling
- QA/QC Plans

Remedial Design

- Feasibility Studies / Alternatives Analysis
- Physical/Chemical Treatment
- Biological Treatment
- Thermal Treatment
- Recovery Well Designs
- Soil Vapor Extraction
- Air Sparging
- Hydraulic Containment
- Closure Plans
- Pilot & Demonstration Programs
- Cost Estimating
- Risk Based Corrective Action
- Natural Remediation Compliance Plans
- Permitting

Site Remediation

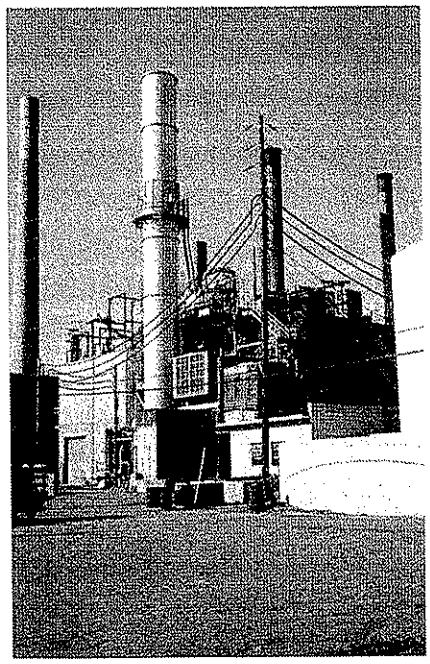
- Contract Administration
- Construction Oversight Services
- System Operations & Maintenance
- Closure Reporting
- Post-Remediation Monitoring
- Expert Testimony

Environmental Compliance Services

Effective management of ongoing environmental compliance issues is often difficult, especially as many companies continue to cutback on non-production personnel. As a result, many EH&S managers find themselves overloaded with multiple tasks. HMM can be a valuable resource that EH&S managers can use to more effectively and efficiently manage their company's environmental obligations, stay up-to-date with current state and federal regulatory trends, identify areas where cost-effective waste reduction measures can be implemented, and receive an objective third-party review of the company's environmental compliance level and/or liabilities. HMM can add value to the company's bottom line and help the management team to refocus resources on product quality and customer service, while staying abreast of regulatory changes and compliance issues.

Periodic Reporting

- Annual SARA Reports (312/313)
- Annual Air Emission Reports
- Monthly DMR Sampling / Reports
- POTW Pretreatment Sampling / Reports
- Hazardous Waste Biennial Reports
- Residual Waste Biennial Reports
- Chemical Analysis of Wastes
- Source Reduction Strategies
- Storage Tank Registrations / Inspections



Contingency Planning

- Environmental Compliance Audits
- SPCC Plan Preparation / Recertification
- PPC Plan Preparation / Recertification
- Environmental Emergency Response Plans
- Storm Water Pollution Prevention Plans
- Hazard Communication Plans
- Risk Management Plans
- Training

Wastewater Management

- NPDES Part I/ Part II Permit Applications
- POTW Permit Applications
- Storm Water Runoff Permit Applications
- Treatment Plant Troubleshooting
- Toxicity Reduction Evaluations

Air Quality

- RFD Applications
- Plan Approval Applications
- Title V Permit Applications
- PSD / Permit Modifications
- System Testing / Balancing

Pipeline Services

HMM has demonstrated experience in virtually all aspects of the natural gas transmission pipeline industry from routine operation and maintenance related matters to design and construction. The firm has successfully completed a wide variety of projects ranging from relatively small scopes of work through major multi-state construction projects. It is this understanding and our extensive resources that enable HMM to quickly and effectively respond to clients' needs, regardless of project size or scope. Our unique geographic office locations further enable us to quickly respond to the needs of the interstate natural gas pipeline industry. Our offices are located in the vicinity of many strategic pipeline hubs. HMM is unique in the industry in its ability to provide our clients with a wide variety of services including: surveying, planning, design, construction phase services and environmental compliance. As a result of our experience, we also understand the importance of close communication throughout any project undertaken.

Project Management

- Feasibility Studies
- Schedule Control
- Project Organization & Staffing
- Alignment & Progress Meetings
- Project Status Reports
- Scope Change Management

Pipeline Engineering

- Field Engineering
- Construction Work Space
- Route Selection & Realignments
- Horizontal Directional Drilling
- Road & Highway Crossings
- Wetland & Waterbody Crossings

Pipeline Surveying

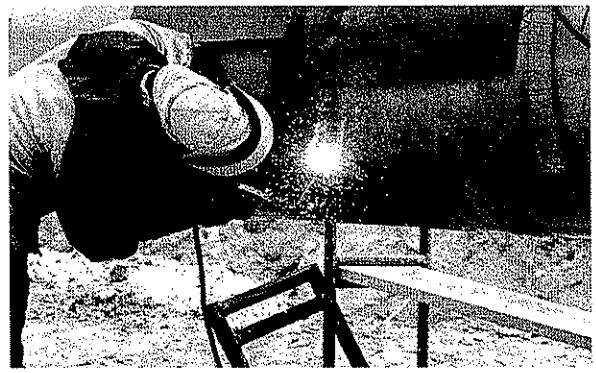
- Preliminary Survey/Alignment
- Aerial Photography & GPS
- Topographic Surveys & Profiles
- Fee Property Surveys
- Existing Conditions Surveys
- Construction Re-Stake
- Record Plan Survey

Construction Services

- Construction Management
- Construction Engineering/Survey
- Resident Observation

Environmental/Cultural Resources

- Agency Consultation & Coordination
- Field Investigations & Surveys
- Wetland Delineation
- Endangered & Threatened Species
- Cultural Resources
- Erosion & Sediment Control
- Revegetation & Maintenance
- Wetland/Water Body Construction Procedures
- Stormwater Management Plans
- SPCC & Mitigation Plans
- Air Quality Monitoring & Permitting
- Federal, State & Local Permitting
- FERC Applications & Coordination



Pipeline Drafting

- Alignment Sheets
- Topographic Maps/Aerial Photographs
- Permit Application Drawings
- Land & Condemnation Plats
- Graphics & Presentation Drawings
- Record Plans

Operation and Maintenance Services

- Pipeline Location & Staking
- Anomaly & Dent Location
- Exposed Pipe Remediation
- Surveying, Drafting, Design, Engineering, Environmental & Permitting

[CCQQ – Attachment "B"]

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

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
Burnwell (Standard/Paint Creek/ Collinsville) Waterline Extension	**8, October, 2008**	**16-1006700**

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
Hatch Mott MacDonald LLC	**27 Bleeker Street Millburn, NJ 07041**	**Hatch Associates Consultants, Inc. (Est. 1955) Mott MacDonald Group (Established 1902)**

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)
973-379-3400	**1972**	Individual **x Corporation** Partnership Joint-Venture	YES **x NO**

6. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE
2601 Cranberry Square, Morgantown, WV 26508, 304-212-4390, Timothy M. Rice, Area Manager / Morgantown – 32

7. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS
Richard L. Steinhart, PE, Vice President	**Timothy M. Rice, Morgantown Office Area Manager (304) 212-4390**

9. PERSONNEL BY DISCIPLINE

223	Administrative	36	Electrical Engineers	35	Mechanical Engineers	56	Transportation Engineers
13	Architects	9	Electronic Engineers	2	Mine Engineers	37	Water Resource Engineers
249	CADD Techs / GIS	27	Environmental Engineers	2	Planners: Urban/Regional	43	Sanitary Engineers
11	Chemical Engineers	37	Environmental Scientists	100	Project Managers	1	Interior Designers
241	Civil Engineers	16	Foundations/Geotech Engr	4	Schedulers	10	Landscape Architects
123	Construction Inspectors	23	Geologists	2	Specification Writers	5	Ecologists
27	Construction Managers	1	Hydraulic Engineer	60	Structural Engineers	7	Aeronautical Engineers
21	Computer Programmers	1	Hydrologists	22	Technicians/Analysts	58	Others
14	Cost Engineers	128	Land Surveyors	1	Safety/Occ. Health Engr	1,645	Total Personnel

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 2
***RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.**

Darryl Brogan and Paul Smith are additional WV Registered Professional Engineers located in our Pittsburgh office. These individuals work on projects in WV and provide the Morgantown office with additional technical and professional support.

10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? ☐ YES ☐ NO **N/A**

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

NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
Keddal Aerial Mapping 1121 Boyce Road Suite 3100 Pittsburgh, PA 15241	Aerial Mapping	X Yes ____ No
NAME AND ADDRESS: **Blue Mountain Surveying** 11023 Mason Dixon Highway Burton, WV 26562	SPECIALTY: Aerial Mapping, Surveying	WORKED WITH BEFORE X Yes ____ No
NAME AND ADDRESS: **Highland Engineering & Surveying, Inc.** 1426 Memorial Drive Oakland, MD 21550	SPECIALTY: Surveying	WORKED WITH BEFORE X Yes ____ No
NAME AND ADDRESS: **Triad Engineering** 219 Hartman Run Road Morgantown, WV 26507	SPECIALTY: Surveying, Geotechnical Drilling	WORKED WITH BEFORE X Yes ____ No
NAME AND ADDRESS: **Test Boring Services, Inc.** 140 Mong Road Scenery Hill, PA 15360-1720	SPECIALTY: Geotechnical Drilling	WORKED WITH BEFORE X Yes ____ No
NAME AND ADDRESS: **Pennsylvania Drilling Company** 281 Route 30 Imperial, PA 15126	SPECIALTY: Geotechnical Drilling	WORKED WITH BEFORE X Yes ____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ____ Yes ____ No

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

YES Description and Number of Projects:
Several members of the WV office have a combined 61 years of AML design experience. Combined they also have completed over 300 AML projects in WV, OH, MD, PA, and VA.

NO

B. Is your firm experienced in Soil Analysis?

YES Description and Number of Projects:
James King has an MS in soil science and is located in the Morgantown office. James routinely provides expertise to our mining and municipal projects. We also have eight geologists located in the Morgantown office working under the direct supervision of Chuck Yurchick, PG.

NO

C. Is your firm experienced in hydrology and hydraulics?

YES Description and Number of Projects:
Our current projects include the study of hundreds of streams and drainage structures over a 1,400 square mile area in southwestern PA and north central WV.

NO

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

YES Description and Number of Projects:

NO
We subcontract the aerial photography, however in-house we provide GPS, surveying and development of the mapping as needed.

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

YES Description and Number of Projects:
Our firm has completed numerous waterline design projects ranging from small municipal extensions to large metropolitan systems. The current staff within the primary office has more than 50 years experience in the evaluation of aquifer degradation and assessment of mining impacts. HMM recently added Jim Fetty, with over 25 years of municipal engineering experience, to our water/wastewater group.

NO

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

YES Description and Number of Projects:
Our staff within the primary office has project management experience with more than 50 AML projects requiring AMD design or evaluation within the state of West Virginia.

NO

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Rice, Timothy M. **Project Engineer, Project Manager**	**21**	**30**	**25**

Brief Explanation of Responsibilities

Mr. Rice presently serves as Area Manager for the Hatch Mott MacDonald Morgantown, WV office.

Mr. Rice is experienced in project management, coordination and supervision for permitting, design, drafting, surveying and drilling projects. His expertise is in reclamation design; mining permits; design of acid mine drainage abatement plans; water resources studies; pre/post mining surveys; hydraulic and hydrological analysis; pre-blast surveys; slope stability analysis; geotechnical design; Phase I environmental audits; storm water management analysis and design; civil site designs; and commercial and residential inspections.

Mr. Rice has also received Levels I – IV of Natural Stream Channel Design Certification. He coordinated mitigation, remediation, and restoration projects for several clients in close proximity to the Morgantown office.

EDUCATION (Degree, Year, Specialization)

B.S., 1982 Civil Engineering
Level I, II, III, and IV Natural Stream Design, 2004

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:
Law, Jeffrey L. **Project Engineer/Project Manager**	**16**	**25**	**15**

Brief Explanation of Responsibilities

Mr. Law is a Project Engineer/Manager for Hatch Mott MacDonald. His experience includes design of AML reclamation plans, permit for 1,000-acre deep mine, barge loading facility, highway entrance permits, mine subsidence evaluations, impoundments, hydrology studies for refuse sites and public water supplies, and has designed storm water management plans for residential and commercial projects. His expertise is in mine subsidence remediation and design; mine facility layout and design; reclamation design; mining permits; design of acid mine drainage abatement plans; pre/post mining surveys; hydraulic and hydrological analysis; pre-blast surveys; slope stability analysis; geotechnical design; storm water management analysis and design; civil site designs; and commercial and residential inspections. Mr. Law has also conducted floodplain evaluations and construction inspection of commercial properties. Mr. Law has experience in project management, coordination and supervision for construction and design of various mining related projects.

EDUCATION (Degree, Year, Specialization)

B.S., 1983 Mining Engineering
A.A., 1980 Mining Engineering

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:
Paul J. Paparella, PE, PP	**0**	**24**	**24**

Brief Explanation of Responsibilities

Mr. Paparella began his career as an Assistant Engineer at Hatch Mott MacDonald (HMM) in 1982. Since that time, his responsibilities have progressively increased to his current role at the management level. Mr. Paparella's work has been primarily in the water supply area. He has experience in the planning, study, design, permitting, construction phase engineering, start-up, testing and O&M of all types of water works facilities. He has been the Project Manager for several major water system planning studies and for designs of pump stations, transmission systems, distribution systems, storage tanks and treatment plants. He has also performed the detailed process and site design for many water system facilities and has designed the instrumentation and control systems for pump stations, treatment plants and other facilities. Mr. Paparella has extensive experience in the hydraulic analysis of water systems, including Hardy-Cross distribution system network analysis and surge analysis in transmission systems.

EDUCATION (Degree, Year, Specialization)

MS, Civil Engineering, New Jersey Institute of Technology, 1985
BS, Civil Engineering, New Jersey Institute of Technology, 1982

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers American Water Works Association	Professional Engineer, 1986, NJ; 2003, MD; 2004, PA; 2003, VA Professional Planner, 1994, NJ

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:
Michael L. Altland, PE	**0**	**18**	**18**

Brief Explanation of Responsibilities

Mr. Altland joined Hatch Mott MacDonald (HMM) in 1988. Since then, he has been involved in various water supply and distribution projects such as transmission mains, pump stations and master plan studies. He has been involved in all project stages from design to construction. As part of the design and study of pumping stations and distribution systems, Mr. Altland has developed expertise in the use of steady-state computer analysis and surge transient analysis computer models. Typical surge analyses have included power failures at booster stations that pump to gradients with elevation differences of 800 to 1000 feet. Mr. Altland is also familiar with other types of surge transients such as valve closure, and has applied his experience with surge and pressure transients to several projects. He has been extensively involved in the preparation of a comprehensive computer model for the New Jersey-American Water Company, which involved modeling the distribution system and preparing recommendations for improvements to meet anticipated future supply and demand conditions.

EDUCATION (Degree, Year, Specialization)

BS, Civil Engineering, Lehigh University, 1988

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Water Works Association	Professional Engineer: 1993, NJ; 2003, MD; 2003, CA

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:
Julie A. Berardinelli, PE **Project Engineer**	**0**	**10**	**10**

Brief Explanation of Responsibilities

Since joining Hatch Mott MacDonald (HMM) in 1998, Ms. Berardinelli has been a member of both the Water Supply Management Division and the Wastewater Management Division. She has developed an increasing range of experience in the area of water supply and wastewater engineering. She has been involved in the design, preparation of plans and specifications, permitting, and construction phase engineering for a variety of projects. She has also represented HMM at public meetings. Ms. Berardinelli's design experience includes water treatment plants, water system master plans, water distribution mains, water pump stations, sanitary sewer force mains, sanitary sewer pump stations, wastewater treatment plants, and low-pressure sewer systems. She has conducted bench-scale treatability tests and performed wastewater characterizations.

EDUCATION (Degree, Year, Specialization)
ME, Environmental Engineering, The Pennsylvania State University, 2006
BS, Civil Engineering, Bucknell University, 1995

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Professional Engineer: 2003, NJ

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:
James W. Fetty, PE **Project Manager**	**0**	**25**	**25**

Brief Explanation of Responsibilities

Mr. Fetty joined the HMM team in 2008 as a project manager. His experience included engineering and management of sanitary and storm sewer design and implementation of projects, waterline installation and replacement projects, GIS development and management for sewer and waterline systems. Mr. Fetty served as City Engineer and Sanitary Sewer Board Engineer for the City of Fairmont, WV for over 17 years.

EDUCATION (Degree, Year, Specialization)

BS, Civil Engineering, West Virginia University, 1982

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
National Society of Professional Engineers Water Environment Federation	Professional Engineer: West Virginia

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

FIELD EQUIPMENT

Sampling Equipment (water/solid)
Ponar Dredge (solids underwater)
Automatic Water Samplers
Hand Augers (soil)
EnCoreTM Samplers
Disposable Field Filters, 0.45 micron
Bailers (disposable Polyethylene, PVC, Teflon)
Groundwater Pumps

Safety Equipment
O2, LEL, H2S, CO Meter
Hazmat Kit/Draeger Tubes
Tripod Confined Space Entry System
Personal Protective Equipment (PPE)

General Equipment
Air Compressor (electric powered, 110V)
Digital Camera
Electric 110V-220V Generator (gas powered)
Jar Test Apparatus
Settling Column
Field Kits (HACH)
Metering Pumps (0-500 ml/min)

Measuring Instruments
Marsh McBirney T2000 Flow Meter (open channel)
Fluorometer (water flow open channel)
Polysonics Flow Meter (closed pipe)
Water Level Recorder
Water Level Indicator (wells, tanks)
Interface Layer Probe (wells, tanks)
Recording Rain Gauge
pH/Conductivity/Temp Meter
pH/Temp Meter
ORP Meter
Specific Conductivity/Temp Meter
Photoionization Detector

Surveying Equipment
Portable Rangefinder
Brunton Compass
Total Station with Data Collector
GPS Submeter Unit
GPS RTK (Portable Base + Rover)

GPS RTK (Complete Unit)

General Office
Microsoft Word
Microsoft Excel
Microsoft PowerPoint
Microsoft Project
Microsoft Outlook
Adobe CS2 Suite

Design and Modeling
AutoCAD 2007
AutoDesk Land Desktop 2007 (civil/site)
Autodesk Civil 3D 2007 (civil/site)
MicroStation V8 2004
FlowMaster 2005 (flow design)
InfoWorks CS (hydraulic modeling)
XP-SWMM (hydraulic modeling)
InfoSewer (hydraulic analysis)
HEC-RAS (open channel modeling)
PENTOXSD for Windows (effluent limits)
WQM 7.0 (BOD/NH3 wasteload allocation)

GIS and Database
ArcGIS (GIS mapping and database mgmt.)
SQLServer (database management)
Oracle (database management)
Microsoft Access (simple databases)

OFFICE EQUIPMENT
Oce TDS 450 B/W Plotter (high speed, wide format)
Oce TCS 500 Color Plotter (high speed, wide format)
Oce Wide Format Color Scanner

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
Scranton/Chinchilla Transfer Improvements, 20" Water Transmission Main and Pump Station Scranton, PA	Pennsylvania American Water 100 N. Pennsylvania Ave. Wilkes Barre, PA 18701	Design, Bid, and Construction Phase Services – Prime	$2,000,000	15%
Pipeline Services Various Sites NY, NJ, PA & New England Regions	El Paso Energy Corporation 8 Anngina Drive Enfield, CT 06082	Engineering and environmental infrastructure consulting services for new pipeline construction, rehabilitation and operation and maintenance projects. Service areas include project management, design, survey, drafting, environmental services, permitting, construction management and inspection, material procurement.	$1,836,000	10%
Pleasantville Distribution Improvements – 8" Water Mains Pleasantville, NJ	NJ American Water 213 Carriage Lane Delran, NJ 08075	Design, Bid, and Construction Phase Services – Prime	$800,000	95%
Winslow Interconnection Pipeline – 20"/24" Water Transmission Main Camden, NJ	NJ American Water 213 Carriage Lane Delran, NJ 08075	Design, Bid, and Construction Phase Services – Prime	$7,000,000	90%
South River Basin Transmission Main Station A – 48" Water Transmission Main Middlesex County, NJ	Middlesex Water Co. 1500 Ronson Road Iselin, NJ 08830	Route evaluation, design, bid, and construction phase services – Prime	$25,000,000	5%
"On-Call" Environmental Services Various Sites, New York and New Jersey	Port Authority of New York & New Jersey 233 Park Avenue South New York, NY 10003	Contract has been renewed each year since 1993 and includes: DPCC/ SPCC Plans, Site/Remedial Investigation, Site Remediation, Right-to-Know Reporting, Storage Tank Management, Permit Application Preparation, Compliance Auditing, EIS/EA Preparation	$1,000,000 to 1,500,000 per year (fee)	Over 100 projects done to date. Each one has its own percent complete
Pendleton Creek Strip WVDEP- AML, Tucker County, WV	WVDEP-AML 105 S. Railroad Street Philippi, WV 26416	Engineering Design Services and Construction Monitoring Servcie for the reclamation of an abandoned surface mine.	$1,700,000	20%

Stream Mitigation/ Restoration Project Southwestern, PA	Confidential Coal Client	Stream Mitigation and Restoration of approximately 13,000 lineal feet of stream affected by longwall mining.	$2,101,246	65%
Stream Monitoring, Southwestern, PA	Confidential Coal Client	Stream monitoring of approximately 13,000 lineal feet of stream affected by longwall mining.	$4,600,000	65%
Chinook Mine Brasil, Indiana	Ed Greenwald, Jr. Headwaters Energy Services 3 Church Street Lawrence, PA 15055	Mapping and verification of coal waste quantities.	$8,600	90%
A & G Coal Norton, VA	Ed Greenwald, Jr. Headwaters Energy Services 3 Church Street Lawrence, PA 15055	GPS locations, GIS mapping and verifications of coal waste quantities.	$9,175	90%
Various Mine Permitting Projects, WV	Confidential Coal Client	NPDES permitting, Permit modifications & UIC Renewal	$20,000	95%
Pond Restoration and Sealing Project Mannington, WV	Confidential Coal Client	Restoration and liner installation on pond affected by longwall mining.	$30,730	95%
Hydropneumatic Surge Tank Design Potomac, MD	Washington Suburban Sanitary Commission 14501 Sweitzer Lane Laurel, MD 20707	Designed surge spheres of 38' diameter for 78" and 48" lines at flows up to 200 MGD. Modifying main zone pump control valves and emergency backwash supply. Coordinated limited disruptions to service during upgrades.	$7,100,000	99%

General Environmental Engineering Services Various Sites along the Garden State Parkway, NJ	New Jersey Highway Authority Executive Offices Woodbridge, NJ 07095	Contract has been renewed each year since 1990 and includes: Site/Remedial Investigation, Site Remediation, Storage Tank Management, Permit Application Preparation, Compliance Auditing, Asbestos and Lead Paint Remediation Services.	$6,000,000 (fee)	50%
Atlanta CSO Tunnels, Atlanta, GA	City of Atlanta 69 Mitchell Street, SW Suite 4310 Atlanta, GA 30335	Design of tunnel and shaft linings for this project involving 11 miles of CSO tunnels and associated drop structures, approach structures and access shafts. The CSO Tunnel system will provide 200 million gallons of CSO storage. Tunnels are approximately 300-ft deep, 27-ft finished diameter traversing primarily through hard Gneiss, Schist and Amphibolite. Construction support services will also be provided.	$500,000	85%
East 55th Street Station Rapid Transit Station, Cleveland, OH	Greater Cleveland Regional Transportation Authority 1240 West 6th Street Cleveland, OH 44113	The project includes the final design of an ADA compliant station for the Light Rail and Heavy Rail lines. The scope primarily includes track realignment, catenary design, drainage, lighting, station architecture, signage, Park 'N Ride lot, traffic signals, surveying and public involvement.	$10,200,000	75%
TOTAL NUMBER OF PROJECTS: 17		TOTAL ESTIMATED CONSTRUCTION COSTS: $69,303,505		

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

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
East Side Access, New York, NY	Program Management. Design review and expert advise on the tunnel design and construction including ventilation systems and other fire/life safety issues. LIRR service into Grand Central Terminal. The new line will utilize the partially completed 63rd Street tunnel and construct approximately 5,000 feet of new tunnel into Grand Central Terminal.	Long Island Rail Road 469 7th Ave., 11th Floor New York, New York 10018	2009	$4,300,000	$17,000
Market Street Elevated Reconstruction Project, Philadelphia, PA	The aerial structure on the west side of SEPTA's Blue Line is being rebuilt where the at-grade track begins. The project spans over two miles and will be accomplished while SEPTA continues to operate service on the line.	Southeastern Pennsylvania Transportation Authority (SEPTA) 1234 Market Street, 11th Floor Philadelphia, Pennsylvania 19107	2008	$200,000 (fee)	$200
Dulles Airport People Mover Tunnels, Virginia/Washington DC	Design of the people mover, baggage and tug tunnel, including mechanical and electrical systems, ventilation systems and fire/life safety for all tunnels on the project. Involves 50,000 ft of tunnels ranging from 18-ft diameter to 40-ft diameter constructed by NATM and TBM, running beneath the airport operating area.	Metropolitan Washington Airports Authority 1 Aviation Circle Washington, D.C. 20001-6000	2007	$900,000	25,800

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)
Program Management Services Providing overall program management of the water distribution system including planning, engineering design and engineering design management services, Master Plan and Operations review and update in support of DCWASA's on-going capital improvement program in excess of $500m. Washington DC	District of Columbia Water & Sewer 5000 Overlook Avenue, SW, 5th Floor Washington DC 20032-5397	$9,500,000	2006	N/A
Crow's Nest Wash Plant	Donald F. Dargie Palmer Management Group 13 Elm Street, Suite 300 Cohasset, MA 02025	$300,000	2006	Yes
Tampa Bay Seawater Desalination Facility Modifications Serving as the Engineer of Record for the project. Responsible for structural, architectural, electrical, mechanical and site related design and review of process design for the planned modifications. Also providing construction engineering services Appollo Beach, FL	American Water Pridesa, LLC 13041 Wyandotte Road Gobsonton, FL 33534	$24,000,000	2007	Yes
Lost Creek Flood Study Project involved performing a FEMA flood study to revise the floodplain boundaries along Lost Creek. Services included creation of a hydraulic model based on new survey data and completion of all necessary FEMA documentation to support the floodplain revision Lost Creek, WV	Harrison County Planning Commission 301 West Main Street Clarksburg, WV 26301	$60,000 (fee)	2005	No
Harrison County Trail (McWhorter to Clarksburg) Preparation of design plans, specifications, and bid documents for the conversion of an abandoned 14-mile CSX Railroad grade to a hiking/biking trail. Services included stormwater drainage design; trail surface design; wetland delineation; and bridge decking/rehabilitation. Harrison County, WV	Harrison County Planning Commission 301 West Main Street Clarksburg, WV 26301	$655,000	2006	Yes

Passaic Valley Water Commission Master Plan Master Planning for expansive water distribution system including hydraulic and water quality analyses, GIS, asset management solutions. The GIS effort included an inventory, inspection and data conversion of all infrastructures within the distribution system. Passaic County, NJ	Passaic Valley Water Commission 1525 Main Avenue Clifton, NJ 07011	$280,000	2002	N/A
Clyde Potts Water Treatability Study and Design Services included evaluation of the 0.5 MGD demonstration plant deficiencies, performing a feasibility analysis for the expansion of the facility, performing pilot scale testing of alternate membrane systems; and completing the design of the new membrane filtration plant. Mendham, NJ	Southeast Morris County Municipal Utilities Authority (SMCMUA) 19 Saddle Road Cedar Knolls, NJ 07927	$6,500,000	2004	N/A
Ashburton Water Filtration Plant Filter Rehabilitation/Upgrade Upgrade 20 filters to improve water quality to the City's distribution system. Upgraded chemical feed systems and rehabilitated the building. Design of a new 48-inch transmission main. Baltimore, MD	Baltimore City Department of Public Works 900 Abel Wolman Bldg. Baltimore, MD 21201	$42,000	2003 (design) 2007 (construction)	No
Ashburton Water Filtration Plant Chlorine System Replacement Replaced the existing gaseous chlorine facilities at the Ashburton WFP with bulk sodium hypochlorite storage tanks and new metering pumps. Baltimore, MD	Baltimore City Department of Public Works 900 Abel Wolman Bldg. Baltimore, MD 21201	$4,500,000	2004	Yes
Little Falls Water Treatment Plant (75 MGD) Upgrade & improvements including: Treatability Study, Pilot Testing & Analysis, Field Survey, Permitting, Plans & Specifications, Construction Phase Engineering, Start-up & Testing, O&M Manual. Passaic County, NJ	Passaic Valley Water Commission 1525 Maine Avenue Clifton, NJ 07011	$75,000 (fee)	2003	Yes

SCADA System for Water Facilities Engineering services for the Study and design of a utility-wide system for the water facilities and water distribution in the Baltimore area. Included preparation of a study and final design report that describes a plan for SCADA system implementation. Baltimore, MD	Baltimore City Department of Public Works 900 Abel Wolman Bldg. Baltimore, MD 21201	$1,500,000	2001	Yes
Structural Services On Call Contract Fifth consecutive task-order contract for structural engineering services, covering all Port Authority facilities in the New York/New Jersey metropolitan area. Under this contract, work has been performed at: La Guardia Airport, George Washington Bridge, Lincoln Tunnel, Goethal's Bridge, Bayonne Bridge, and Newark Airport. NY & NJ	Port Authority of NY&NJ 241 Erie Street Jersey City, NJ 07310	$10,000	2004	Yes
72-inch dia. Transmission Main Services include: Route Evaluation & Design, Site Location and Associated Field Work, Plans and Specifications, Permitting, Pre-purchased material, Easement Acquisition, Cost Estimates, Construction Observation and Resident Observation for 14,000 lf of 72-inch dia transmission main. Somerset County, NJ	Elizabethtown Water Company 1341 North Avenue Plainfield, NJ 07062	$7,500,000	2001	Yes
Storm Drainage & Flood Control Improvements Storm sewers, stream improvements, an earth dike & a pump station and installation of streamflow and rainfall gauging station equipment on the East and West Branches of the Rahway River. Services also included: Field Surveys, Wetlands Assessment, Hydrologic / Hydraulic Investigations, Cost Estimates, Cost Benefit Analysis, Flood Warning System, Flood Preparedness Plan. Essex County, NJ	Millburn Township 375 Millburn Avenue Millburn, NJ 07041	$2,000	On-going	Yes
General Municipal Engineering Services Provide general municipal engineering services including review of development applications, planning and design of improvements to the Township's potable water, sanitary sewer, storm sewer and	Jefferson Township 1033 Weldon Road Lake Hopatcong, NJ 07849	$250,000 to 800,000 per year (fee)	On-going	N/A

road systems, assistance in the drafting of ordinances, and preparation of grant application for capital projects and open space acquisition. Morris County, NJ				
Norfolk Southern Heartland Corridor Project, Various Locations Inspection and evaluation of clearances, condition, and geotechnical characteristics for 30 railroad tunnels. Laser car measurements, geotechnical borings, liner samples, and visual inspections were used to establish the existing baseline conditions and to evaluate the potential for tunnel modifications to provide additional clearances.	Norfolk Southern James N. Carter 404.529.1408	$180,000,000	2005	N/A
Emergency Services Contract for Route 70 Bridge Over Friendship Creek HMM provided emergency design and construction consultation services for the replacement of a collapsed bridge on NJ Rt. 70 due to scour. Developed diversionary road alignment and profile and foundation design for a 130' temporary Acrow Bridge maintaining all lanes of traffic, which was opened to traffic in five days after the collapse. Ultra fast-tracked the design and developed detailed design sketches in advance of full design drawings for use by contractor and fabricators in accordance with the NJDOT Procedures Manual, NJDOT Roadway & Bridge Manuals and AASHTO Standard Specifications for the permanent replacement structure.	New Jersey DOT 1035 Parkway Avenue Trenton, NJ Brian Strizki 609.530.6363	$3,000,000	2004	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
Columbus Crossover Taxiway, Port Columbus International Airport, Columbus, OH: Preliminary structural design engineering for the taxiway bridge(s) including an investigation of bridge types, structural systems, de-icing systems, costing and development of structural design considerations for final design.	Columbus Airport Authority 4600 International Gateway Columbus, OH 43219	$30.87 M (Construction)	2006	Yes	RWA Associates
Westport Railroad Station, Westport, CT As part of an ADA compliance upgrade, a pedestrian tunnel had to be constructed under four live Metro-North Railroad tracks, which also carry the East Coast Main Line service between Boston and New York. HMM completed a feasibility study and subsequently designed and provided on site supervision for the construction of a 75 ft long jacked tunnel.	Connecticut Department of Transportation 2800 Berlin Turnpike, P.O. Box 317546 Newington, CT 06131-7546	$2.5 M (Construction)	2003	Yes	TAMS Consultants
Easterly Advanced Facilities Plan, Cleveland, OH QA/QC of geotechnical data collection and reporting, feasibility and selection of tunnel and shaft excavation and lining systems. 30% design of tunnel linings and construction cost estimates for all tunnel construction contracts. This project involved 16-mi of CSO tunnels, from 20 to 27-ft in finished diameter and as deep as 200 feet traversing primarily through Chagrin Shale.	Northeast Ohio Regional Sewer District 3826 Euclid Ave. Cleveland, OH 44115-2504	$166,000 Fee	2003	Yes	Haley & Aldrich, Inc.

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.

Hatch Mott Macdonald's talented staff and years of experience in meeting the hydraulic and water supply engineering challenges have made us a leader in water supply management. ENR's April 2008 Top 500 Design Firm List has Hatch Mott MacDonald (HMM) listed as 59, up from 63 the previous year. Additionally our current staff has years of AML experience in six different states and gives us the knowledge and understanding of project management and cost control to complete this project on time and within budget.

20. The foregoing is a statement of facts.

Signature: _____ Title: Area Manager

Printed Name: Timothy M. Rice

Date: October 8, 2008

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

[RPEM – Attachment "C"]

Hatch Mott MacDonald

Installation of New Water Lines
IFB #DACA1-85-D-0019

Location
Fort Dix, NJ

Client
United States Army Training Center and Fort Dix

Reference
Gerard T. Whittle
Chief
609.562.5949

Hatch Mott MacDonald (HMM) was retained by the Department of the Army to provide design plans and specifications for a 35,000 linear foot expansion and reinforcement of the Fort Dix water distribution system. The project interconnected the main water distribution serving the cantonment area with a previously isolated water system at range headquarters. Additional extension and interconnections were designed to reinforce fire flows in other portions of the base.

Engineering services provided included alignment selection field surveys, and preparation of plans and specifications.

Design included various special details including stream, railroad and roadway crossings. The design recognized the need to maintain service during construction and connection to existing mains.

Hatch Mott MacDonald

American Water Master Agreement- Pipelines

Location
Various

Client
American Water Company and subsidiaries

Project Type
Water mains and sewers

Services
Route assessments
Surveys
Designs
Permitting
Construction support
Resident observation

Duration
December 2004 – Ongoing

Construction Cost
N/A

Project Description

American Water Company is a major investor-owned utility company providing water and wastewater service in numerous states. The company has operating subsidiaries in the various states, known as New Jersey American Water, Maryland American Water, etc. American Water has ongoing capital improvements programs throughout its systems, and typically engages consulting firms to provide engineering services for most of its projects.

In 2004, American Water began a nationwide alliance program with selected engineering consultants. Hatch Mott MacDonald (HMM) is one of these consultants, and has been working under a Master Services agreement with American since December 2004. HMM had also worked for American Water for many years prior to the Master Agreement.

HMM Role

Since commencement of the Master Services agreement, HMM has received numerous Task Order assignments for work in New Jersey, Pennsylvania, Missouri, California, Arizona, and other locations. While these Task Orders encompass a wide range of projects, a number of them have been for water main, gravity sewers, and force main projects. On these projects, HMM's services typically include surveying, soils borings, preparation of plans and specifications, permitting, cost estimating, and construction administration. Some of these pipeline projects also involve evaluation of alternative routes, and resident observation of construction.

Project Highlights

Pipeline projects undertaken to date under the Master Services Agreement include:

- Ocean City Sewer Replacements: 20,000 LF of collection sewer replacement in Ocean City, NJ
- Pleasantville Transmission: 39,000 LF of 12-inch through 24-inch water transmission mains in Egg Harbor, NJ
- Highlands-Sea Bright Transmission Main: 16-inch water main with major river crossing in Sea Bright, NJ.
- Brookhill Force Main: 3,000 LF of 8-inch sanitary force main in Lakewood, NJ.
- East End Relief Sewer: 6,000 LF of 18-inch and 24-inch gravity sewer and 2,200 LF of water main in Lakewood, NJ
- Swimming River-Newman Springs Pipeline: evaluation of alternatives to rehabilitate or replace 11,000 LF of 36-inch water main in Monmouth County, NJ
- Camden County High Service/Winslow Interconnection: 52,000 LF of 20-inch and 24-inch water transmission main in Camden County, NJ
- Bridgepoint Road transmission main: 2,200 LF of 60-inch water transmission main in Montgomery, NJ
- East Rockaway & Baldwin Transmission: 13,500 LF of 20-inch water main in Long Island, NY
- Scranton/Chinchilla Transfer: 8,000 LF of 12-inch through 20-inch water mains in Scranton, PA
- Middletown Transmission: Alternative route evaluations for 44,000 LF of 36-inch water transmission main in Monmouth County, NJ
- Tea Street Water Main: 1,000 LF of 36-inch water transmission main in Bound Brook, NJ

Hatch Mott MacDonald

Water Main Relay and Sewer Reconstruction Capital Programs

Location
Philadelphia, PA

Client
City of Philadelphia
Philadelphia Water Department

Reference
Michael Lavery, PE
Manager, Design Branch
Water/Sewer Section
215.685.6280

Services
Field Location Surveys
Base Mapping Development
Contract Plans and Specifications
Construction Cost Estimates

Hatch Mott MacDonald (HMM) has been providing "on-call" design services for the Philadelphia Water Department since 1997 for various water, sanitary sewer and storm sewer rehabilitation projects.

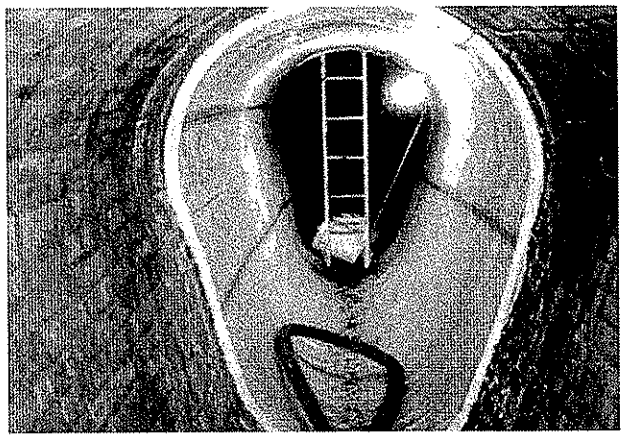
To date, HMM has designed approximately 14,600 linear feet of replacement water mains in various portions of the City, and approximately 26,960 linear feet of sanitary sewer replacement, under twelve separate assignments. Replacement water mains have ranged from 8-inch to 16-inch in diameter. For the most part, the sewers which have been replaced are old 3' by 2' egg-shaped brick sewers. The approximate construction value of the water and sewer replacements is $12,500,000.

HMM has also designed in-place rehabilitation using cured-in-place liners of approximately 6,000 linear feet of old brick sewers. The sewers rehabilitated with trenchless methods are primarily in very high traffic areas, such as Center City Philadelphia. Sewer diameters ranged from 12-inch to 48-inch, with a construction value of approximately $1,800,000.

Typical services included under water and sewer replacement task orders include field location surveys, development of base mapping in accordance with City of Philadelphia standards, and detailed design and preparation of contract plans and specifications. Construction cost estimates are also developed for all designed improvements.

In addition to water and sewer replacement and rehabilitation, HMM has also completed or is currently designing a number of special projects for the Water Department, including:

- Installation of an automated inflatable rubber dam in an 11-foot diameter combined sewer outfall, for the storage of flow during rain events. Project included structural, mechanical and electrical design of a control building and modifications to the outfall. Estimated construction value of the work is $3,500,000.
- Design of modifications to six combined sewer regulating chambers, including the construction of new pre-cast and cast-in-place concrete structures and installation of slide gates, on sewers ranging in size from 36" to 12' by 12'. Total construction cost of the improvements is $1,700,000.
- Design of modifications to a combined sewer regulating chamber involving the installation of a hydraulically actuated sluice gate. Project includes structural, mechanical and electrical design of a new control building. Estimated construction value is $450,000.
- Development of a detailed construction cost estimate for a 16.5-foot diameter, 3,500' long storm water relief tunnel.



Hatch Mott MacDonald

Stream Mitigation and Remediation Project

Location
Greene and Washington Counties, PA

Client
Confidential Coal Client

Services
- Augmentation Work Plans
- Grout Injection Work Plans
- Subsurface Investigation Plans
- Stream Surveying
- Flow Monitoring
- Surface and Groundwater Monitoring
- GIS Mapping
- Hydrologic Modeling
- Channel Design
- Report Preparation
- Construction Inspection

Project Description

Hatch Mott MacDonald was retained by a private coal client to assist in the mitigation and remediation of over 13,000 lineal feet of streams that have been affected by longwall mining.

Work included surface and groundwater monitoring, hydrologic modeling, and subsurface investigations to determine minimum base flows for development of augmentation plans. Geologic conditions were then used to prepare a mitigation plan and develop a grout injection design for remediating the loss segments of the affected streams. This grout injection design consisted of a shallow, low-pressure injection of portland and bentonite to seal fractures and reduce water loss. Stream surveying of the remediation sites and control streams were used to establish a stable stream geometry that would effectively carry bankfull flows. Trimble GPS units and GIS software was used to develop maps showing the flow advancement downstream as construction progressed.

HMM performed the construction inspection and construction management of the project. This work included full-time inspection, evaluation of contractor performance and work product, and approval of contractor quantities.

Hatch Mott MacDonald

Engineering Program Management Services for the Water Distribution System

Location
Washington, DC

Client
District of Columbia Water and Sewer Authority

Reference
Roger L. Gans, PE
Manager, Planning & Design
202.787.2452

Curtis Cochrane
Program Management
202.787.2366

Project Duration
September 2001 – January 2004
(Hydraulic Modeling and Interconnection Evaluation Study)

Project Cost
Total $21 million
Hydraulic Modeling and Interconnection Study
$350,000

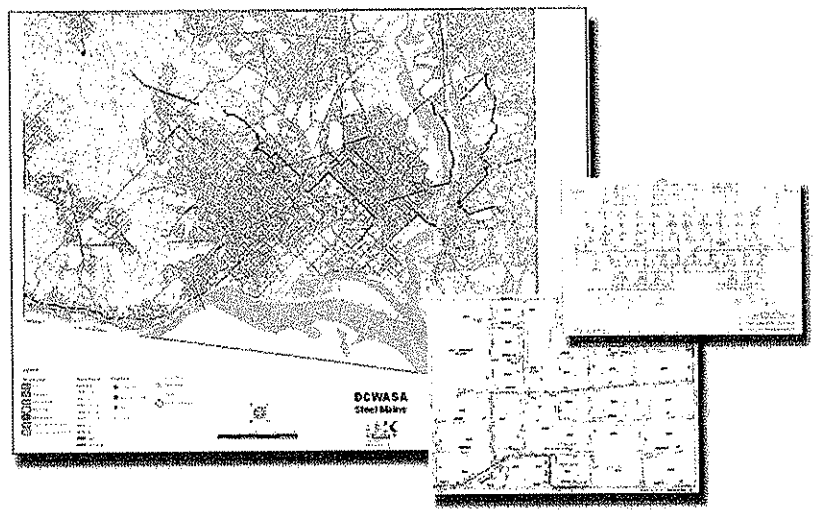
The District of Columbia Water and Sewer Authority (DCWASA) provides domestic and fire protection service to the District of Columbia serving a population in excess of 500,000 people. DCWASA is responsible for the retail distribution of water and with an average daily demand of approximately 135 million gallons per day (MGD). The water system is comprised of approximately 1,300 miles of mains in seven pressure zones. Storage for system equalization and fire protection is provided in 9 storage reservoirs and tanks. DCWASA also maintains and operates four pump stations and approximately 36,000 valves and 8,700 hydrants.

The Joint Venture Team of Hatch Mott MacDonald (HMM) and Michael Baker, Jr. is providing overall program management of the water distribution system including planning, engineering design and engineering design management services, Master Plan and Operations review and update in support of DCWASA's on-going capital improvement program. The capital improvement program (CIP) budget for the next 20 years is in excess of $500 million.

The Joint Venture Team is providing on-site management assistance as well as off-site support assisting DCWASA in implementing the CIP. In addition to assisting DCWASA with the implementation of the CIP, the Joint Venture team is also undertaking a comprehensive pipe condition assessment program of the entire distribution system; updating and expanding DCWASA's hydraulic model to include all distribution mains and incorporate water quality functionality in response to terrorist threats; providing resident inspection services for high profile water main rehabilitation projects in Georgetown; as well as providing DCWASA with assistance with day-to-day engineering tasks.

HMM developed water distribution hydraulic models that included all pipes within the water system for the various gradient zones. These models were georeferenced to the Maryland State Plane Coordinate System to provide planning level accuracy for use and overlay with other GIS datasets. The development of the models included extensive quality control for the data conversion through the cross-referencing of detailed system maps to verify the accuracy of the AutoCAD basemap. Calibration of the models was developed through an extensive review of available SCADA information, previous hydrants flow tests, historical pipe coefficient test data, pipe materials data coupled with date of installation and additional field flow tests. The models are used on a daily basis to perform hydraulic analyses to support planning and construction activities, including: valve replacement projects; pump station rehabilitation projects; tank siting; main replacement; and fire protection analysis.

HMM assisted DCWASA in the selection of the modeling software, WaterCAD by Haestad Methods, and is providing a training manual and onsite training to DC WASA staff.



An additional effort by HMM included the development of an internal web page that serves out GIS data using ESRI's ArcIMS. The GIS web page includes many GIS data sets that are used to improve data sharing and the analysis of distribution system conditions, including:

- Input and output from hydraulic modeling assignments;
- Locations of closed/broken valves;
- Pipe material and condition inventory;
- Topographic data;
- Street centerlines with geocoding capabilities;
- Hot links to scans of distribution maps; and
- Other environmental datasets

DCWASA is interconnected with the Washington Suburban Sanitary Commission (WSSC) system at 15 locations. As part of HMM's services, an evaluation of the interconnections was undertaken to determine which interconnections should be maintained in service and upgraded to improve the overall reliability of WASA's system. The evaluation included coordinating meetings with both utilities; hydraulic analysis to determine which interconnections provide the greatest hydraulic benefit; and review of water quality concerns associated with blending chloraminated water (DCWASA) with free chlorine system water (WSSC). The study concluded that WASA should upgrade and rehabilitate 5 interconnections, including new metering facilities. HMM assisted WASA with the development of a scope of work and negotiated design services for these improvements.

Hatch Mott MacDonald

Impoundment Mitigation and Restoration Project

Location
Wetzel County, WV

Client
Confidential Coal Client

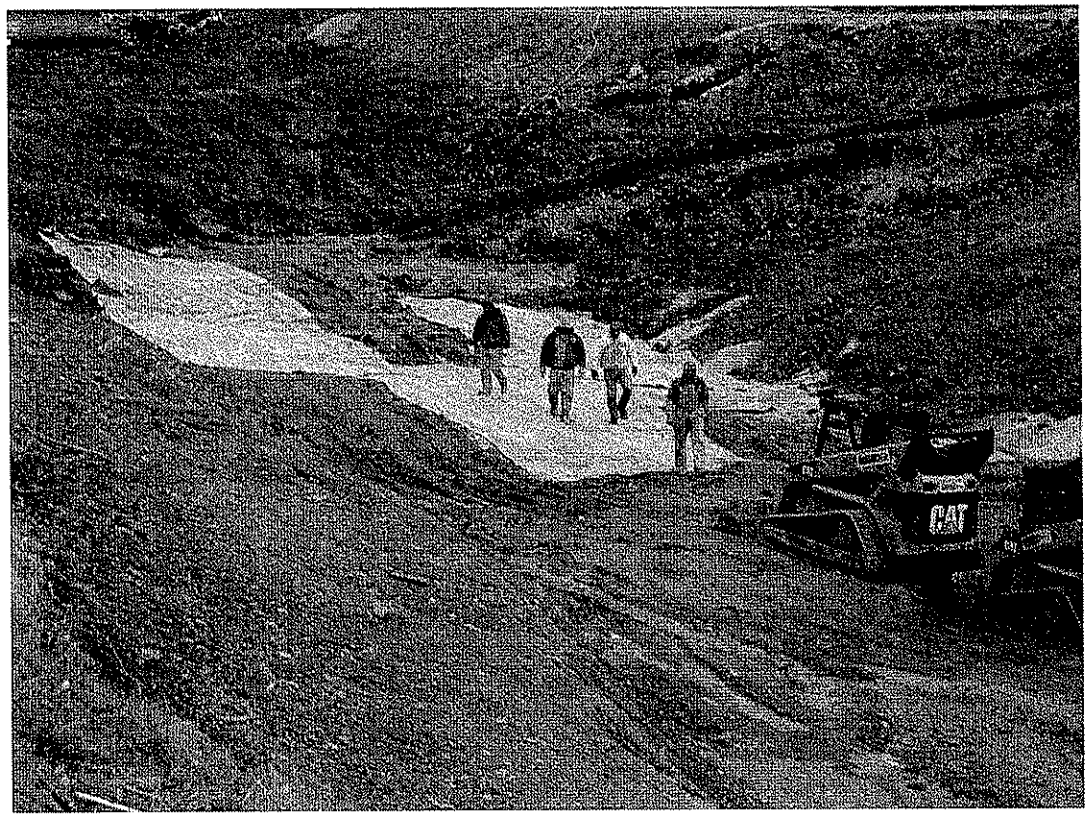
Services
- Grout Injection Work Plans
- Subsurface Investigation
- Surveying
- Utility camera survey
- GIS Mapping
- Liner Design
- Cost Analysis
- Construction Inspection

Project Description

Hatch Mott MacDonald was retained by a private coal client to assist in the mitigation and remediation of an existing private impoundment that had been affected by longwall mining.

Work included investigation of subsurface data, groundwater monitoring, hydrologic modeling, and flow loss analysis. Hatch Mott MacDonald developd a combination grout injection plan and geosynthetic liner design. This grout injection plan consisted of a shallow, low-pressure injection of a mixture of Portland cement and bentonite to seal fractures and reduce water loss. The geosynthetic liner design utilized an impermeable bentonite mat at select locations within the pond bottom. A utility camera was used to observe infiltration and leakage of the pipe principal spillway.

HMM performed the construction inspection and construction management of the project. This work included full-time inspection, evaluation of contractor performance and work product, and approval of contractor quantities.



Hatch Mott MacDonald

72" Eastern Transmission Reinforcements, Phase III

Location
South Bound Brook, Somerset County, New Jersey

Client
Elizabethtown Water Company

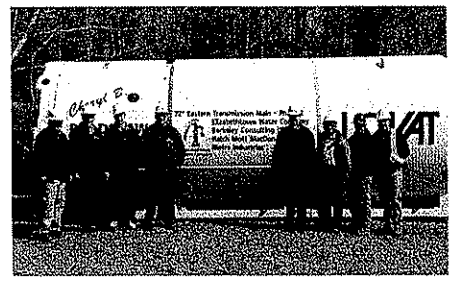
Project Type
Water Transmission Main with Tunneled River Crossing

Services
Design, Construction Engineering and Construction Management Services for trench, tunnel, and pipeline to carry water transmission main and environmental mitigation

Duration
Design:
April 2003 to Dec 2003
Construction:
Jan 2004 to July 2004

Construction Cost
$7.5 million

Project Description



To improve its water supply system the Elizabethtown Water Company strengthened its Eastern Transmission Main by extending a 72-inch main from South Bound Brook to Middlesex Borough in NJ, passing beneath the historical Delaware and Raritan (D&R) Canal and the Raritan River in tunnel. The 1200ft long tunnel was bored using a 102inch diameter LOVAT TBM from the 50 ft deep, 32 ft diameter West Shaft in South Bound Brook to the 40ft deep, 14ft diameter East Shaft in Middlesex County. At both shaft locations open cut trenches connect the new water main to the existing mains using restrained joint PCC pipes.

Ground conditions encountered during tunneling consisted of fractured and weathered shale varying from very poor to moderately strong. Water inflows of up to 30gpm from discrete sources were encountered with an overall inflow into the tunnel of 140gpm. No advance grouting or probing was undertaken to control the groundwater as the TBM was fitted with doors to control water. The tunnel was lined throughout with fully lagged steel arch ribs at 5ft centers and the 72 inch cement lined steel pipe was installed and grouted using cellular foam grout upon completion of tunneling.

Due to environmental concerns contact grouting of the liner plates at the west shaft and the sheet piles at the east shaft was undertaken to eliminate the possibility of groundwater movement. In addition at the West shaft asbestos was removed prior to construction and at the East Shaft arsenic in the groundwater meant that all water pumped from the underground works passed through decontamination filters and settlement tanks prior to discharge. Benzene and chlorinated solvents present in the groundwater also posed concerns and regular monitoring was undertaken.

The project was let under a two-stage Target Cost contract within an informal partnering arrangement to allow for fast-track completion of design and allow timely decision making to be made at the lowest responsible level during the construction phase. As a result of this arrangement the project team was able to recover a 2.5month delay on a 9-month schedule caused by late possession of worksites to ensure completion of the project by the original contract end date.

HMM Role

Prior to construction HMM conducted a geotechnical and environmental investigation program to determine the subsurface conditions for the trench and tunnel design and to write all Bid Documents.

HMM undertook the design of trench, shaft and tunnel including preparation of contract drawings, specifications and Geotechnical Baseline Report for Bid. The initial tunnel design was a 10-foot by 10-foot horseshoe shaped cross-section excavated by roadheader from East to West shaft. Upon review of the Bid Document and as part of the two-stage process, the Contractor proposed to construct the tunnel by TBM and to drive from West to East. The Contractor then prepared the GBR-construction (GBR-Con) prior to negotiation of the Target Cost of Construction. Follow-up work included review of the Contractor's pre-construction design submissions, including: shaft and tunnel support systems, approval of the GBR (Con), preparation of revised construction drawings taking into account Contractor's use of TBM, preparation of revised specifications etc.

During construction HMM provided Construction Management and Engineering services including: monitoring of construction activities to ensure the Contractor's compliance with both his methods and Specification and Drawings, on site resolution of technical, design and schedule issues related to construction activities, quality control checking, review of Contractor's submissions, assistance with payment issues, monitoring of progress against schedule and advising the Client of schedule problems and solutions for acceleration.