

Statement of Qualifications

October 2004



CP Environmental Group, Inc.



CP Environmental Group, Inc.
Business Solutions for Your Environmental Challenges

COMPANY PROFILE

The CP Environmental Group (CPEG) team has a solid history of providing quality and cost-effective environmental services. We specialize in working with clients during renovations, acquisitions, and divestitures of environmentally-impaired sites, as well as assisting with environmental compliance at operating facilities. We have contributed to the success of hundreds of redevelopment and compliance projects for our industrial, commercial, and municipal clients by providing a combination of technical excellence, practical experience, and responsiveness.

Virtually every site development project must contend with at least one unique environmental issue. In addition, operating facilities must comply with environmental regulations and sometimes require assistance with response to environmental releases. CPEG's professional services have proven equally successful when provided individually, as outlined below, or as turnkey services to assist our clients with brownfield redevelopment, commercial business expansion, or orphan property site closure:

- ◆ Asbestos Inspection and HazMat Surveys
- ◆ Asbestos / Lead Abatement and Demolition Management
- ◆ Environmental Site Assessments
- ◆ Hydrogeological Investigations
- ◆ Remediation Engineering Design, System Installation, O&M
- ◆ Reclamation and Compliance Management
- ◆ Storage Tank Management
- ◆ Brownfield Management / Act 2 Site Closure
- ◆ Due Diligence (Phase I/II/III, remediation & site closure)
- ◆ Geotechnical Consulting / Investigations
- ◆ Mold Inspection and Air Monitoring
- ◆ Remediation System Troubleshooting and Optimization
- ◆ Risk Assessments
- ◆ Waste Disposal Management, Permitting and Compliance

CPEG managers offer over 100 combined years of professional experience in meeting the environmental needs of our clients, providing these services throughout the Great Lakes and Mid-Atlantic Regions. Our multi-disciplined Pittsburgh-office team has a wide variety of expertise including asbestos management, environmental science, engineering, geology, hydrogeology, and microbiology. CPEG Associates represent our most important asset.

Our clients include developers, major oil companies, local government, transportation companies, industrial and commercial clients across the United States. We plan to expand our portfolio by using our new status as a **Woman-owned Business Enterprise (WBE)** and a **Pennsylvania Socially and Economically Restricted Business (SERB)**, in addition to our certifications as part of the **Small Business Administration 8(a) Business Development** program, and as an SBA **Small Disadvantaged Business (SDB)**.

The CPEG management approach is conveyed by our Mission Statement:

“CP Environmental Group associates are dedicated to exceeding the expectations of our clients by providing quality, responsive, cost-effective business solutions for their environmental challenges. We are committed to growing our company profitably, providing personal growth opportunities for our associates, and contributing to the betterment of our communities.”

BUSINESS SOLUTIONS FOR YOUR ENVIRONMENTAL CHALLENGES

There are many factors to consider when dealing with an environmentally impacted operating facility, an orphaned property, a new acquisition, or a get-it-off-the-books divestiture that is identified as an environmental eyesore. The old approach of “ assessing it forever” and using one traditional low-tech remediation method (e.g., pump-and-treat or dig-and-haul) have proven to be costly and, in many cases, only marginally effective alternatives.

CPEG has developed an outstanding team that approaches each project with a business management mindset. Although the initial objective may be to “clean up the mess” because “we have to”, the final objective should be to manage the impact to create positive results regarding community relations, regulators, customers, stock holders, fellow associates, long-term strategies, etc. In many cases, environmental eyesores that keep financial officers awake at night can be managed *using technically sound business solutions to minimize the direct expense and duration of clean-up*, while improving public relations and meeting regulatory and client goals. The business solution selected during the evaluation process may include using a combination of management strategies such as:

- § Negotiations and precedence-setting agreements with regulators
- § Preparation of site-specific risk assessments
- § Recycling/resale of recovered chemicals/waste streams
- § Natural attenuation and passive remediation technologies
- § Source and hot-spot control, mitigation, and removal
- § Development of site and chemical-specific remediation goals
- § Horizontal directionally-drilled well remedial applications
- § Traditional remediation approaches
- § Remediation system troubleshooting and optimization
- § Facility decommissioning
- § Financial risk management and liability transfer

The best business solution is not always obvious when first looking at the symptoms. Let CPEG introduce our team of experts to your management team to identify site goals and potential solutions that are most consistent with your business strategies.



MANAGEMENT STRATEGIES

Site-specific remedial action goals must be consistent with the client's business philosophies, fiscal limitations and operational schedules, in addition to meeting applicable regulatory requirements and optimizing positive public relations impact. The CPEG team considers each of these factors when developing the appropriate business solution for managing an environmentally impacted property. Whether the remedial action is preventative, voluntary, or regulatory-driven, the goals must be cost-effective and technically feasible. Some of the management strategies used by our engineering, consulting, and construction teams are briefly summarized below.

Negotiations and Precedence-Setting Agreements with Regulators

CPEG has been successful in minimizing or eliminating enforcement action, and attaining letters of no-further-action and covenants-not-to-sue from regulatory agencies. These results are accomplished, in part, using successful negotiating and conflict resolution techniques that consider the client's regulatory obligations without losing sight of the client's business objectives. For each project, a site-specific strategic plan and decision-making flow path are prepared that empowers the project team and the client. By presenting a feasible strategy to the regulatory agencies, project control and direction remains with the client and the project team.

Preparation of Site-Specific Risk Assessments

A site-specific risk assessment can effectively reduce potential corrective action costs by focusing on the actual and reasonable land uses of the site, instead of simply quantifying the traditional maximum-exposure worst-case land use scenarios for day care centers or hospitals. *CPEG uses reality to the client's advantage.* Our experienced associates have prepared risk assessments that alone lead to no-further-action letters, or significantly reduced the scope and cost of the selected corrective action.

Recycling/Resale of Recovered Chemicals/Waste Streams

"One man's garbage is another man's gold" is an old saying that is all too often forgotten when looking at waste streams. CPEG, where possible, finds a purchaser/recycler for recovered chemicals/waste streams rather than using traditional disposal. This option both minimizes a client's future liability and reduces the total cost of remediation.

Natural Attenuation and Passive Remediation Technologies

Natural attenuation and enhanced in situ passive bioremediation techniques can reduce the capital costs, as well as the operation and maintenance costs at sites that exhibit characteristics and contaminants receptive to biodegradation and/or other natural attenuation processes. CPEG associates project, using standard methods, the length of time the site will require to attain chemical-specific remedial action goals using passive techniques. Estimated costs for monitoring per current regulations are compared with the costs of more intrusive remedies to enable the client to make a business decision based on cost-effectiveness and timeliness.

Source and Hot-Spot Control, Mitigation, and Removal

One of the first steps in any remediation is to identify and control the source and to mitigate hot spots that act as sources. CPEG can offer feasible control options that envelope many types of alternative technologies, from traditional excavation of soil or vacuum extraction of free product from groundwater, to site-specific systems such as *in situ* vitrification of soil or



designing and installing recovery wells for dense and light non-aqueous phase liquids (DNAPLs and LNAPLs).

Development of Site and Chemical-Specific Remediation Goals

Applicable federal, state, and local regulations influence the development of chemical-specific remedial action goals. CPEG's associates identify site indicator chemicals and chemical-specific target concentrations that reflect the appropriate/reasonable site circumstances and land use, thereby providing the corrective action project with chemical-specific end-points.

Horizontal Directionally-drilled Well Remedial Applications

These cutting-edge remediation solutions are site-specific applications that combine remedial processes using horizontal directionally-drilled (HDD) wells to maximize subsurface effectiveness of the remedial processes. This method aggressively obtains cost and time-effective remediation of highly/broadly impacted sites by concurrently addressing each contaminant distribution phase and minimizing or eliminating waste generation. For example, groundwater, vadose zone, and adsorbed separate-phase product can be addressed concurrently using HDD wells in situ, thereby yielding remediation without generation of a waste stream.

Traditional Remediation Approaches

For some projects, a "traditional" remediation approach is best suited to meet the identified project goals. CPEG associates are knowledgeable in traditional remediation methods such as soil vapor extraction, dual-phase vapor extraction, air sparging, bioremediation, and pump-and-treat and utilize this knowledge during the planning stages of a project through remedial design and implementation.

Remediation System Troubleshooting and Optimization

The cost of operating an improperly designed treatment system can at times exceed the cost of redesigning the system so that it can effectively achieve site closure. Remedies range from optimization of the system O&M to the last resort of system redesign. In some cases, simple modifications to the aboveground equipment can result in major reductions in the cost and time to closure. Cost-benefit and time-to-closure analyses for recommended modifications allow clients to evaluate the modifications from both an economic and a risk standpoint.

Facility Decommissioning

CPEG provides turnkey services to decommission facilities ranging in size and scope from a corner gas station to a chemical manufacturing plant or bulk oil storage plant. Our services include UST and AST removal, permitting, asbestos and lead abatement, drum handling and demolition. We can coordinate disposal, treatment or sale of hazardous and non-hazardous waste to cost-effectively decommission a facility, rendering it ready for sale or redevelopment.

Financial Risk Management and Liability Transfer

The ability to reliably budget remediation expenses and possible liability costs is critical to evaluating a project's economic viability. CPEG's relationships and experience with financial risk specialists allow us to offer fixed-price remedial action contracts and liability risk transfer strategies that are tailored to the client's unique circumstances and supported by insurance.

Summary

CPEG's team combines their remediation skills with progressive teamwork strategies, to bring our clients *cost-effective business solutions* to their environmentally impacted



properties. Our team members have utilized business solutions to successfully remediate environmentally impacted sites in less time and cost than the traditional approaches presented by others.



ASBESTOS / LEAD ABATEMENT AND DEMOLITION MANAGEMENT

Asbestos-containing materials and lead-based paint are major concerns for building owners when planning a facility renovation or demolition. OSHA standards and EPA regulations have placed management constraints on building owners in order to protect building occupants and general construction workers.

CP Environmental Group (CPEG) provides cost-effective abatement solutions for our clients that limit liability and ensure compliance with these standards and regulations. Our work force is trained following the EPA's Model Accreditation Plan and is licensed in multiple states. CPEG's abatement management services include:

- Asbestos inspection and hazardous materials surveys.
- Project scoping and budgeting services.
- Abatement options including removal, repair, and encapsulation.
- Disposal of asbestos-containing materials and lead-based paint waste at licensed and approved landfills.
- Project consultation and interface with regulatory agencies.
- Daily air monitoring in accordance with OSHA requirements during abatement activities.
- Minor demolition services to access hidden materials or for ease of project management

Following the abatement of asbestos containing materials and lead-based paint, as needed, CP Environmental group provides demolition management and contracting to efficiently carry out our clients' pre-construction site preparation needs.

In summary, CPEG's variety of project experience enables us to effectively deal with regulatory issues and challenges that arise during site renovations/demolitions.



ASBESTOS INSPECTION AND HAZMAT SURVEYS

CP Environmental Group (CPEG) provides United States Environmental Protection Agency (U.S. EPA) certified and State-licensed asbestos building inspector(s) to conduct National Emission Standards for Hazardous Air Pollutants (NESHAP) asbestos surveys to identify suspect asbestos-containing materials (ACM). The inspector collects bulk samples of suspect ACMs for laboratory analysis. If requested by our clients, our limited NESHAP asbestos surveys are non-destructive and do not include selective demolition of finishes or structural components to gain access to concealed materials. The inspector(s) record the approximate measurements, location, and hazard assessment of each suspect ACM, and collects samples of accessible materials only.

Bulk samples are transported to a laboratory with accreditations from the National Institute of Standards and Technology (NIST) and the American Industrial Hygiene Association (AIHA) for analysis of asbestos fibers content, in accordance with the U.S. EPA Method and the guidelines of the National Voluntary Laboratory Accreditation Program administered by NIST. Sample analytical results are provided for each distinct layer of each sample submitted per the U.S. EPA "Method for the Determination of Asbestos in Bulk Building Materials". CPEG then prepares a NESHAP Asbestos Survey Report. The report includes laboratory results, material descriptions, locations and approximate quantities of each ACM, and the associated hazard assessment.

At our client's request, CPEG can also perform Hazardous Materials Screening Surveys for materials other than asbestos during the same inspection event, including polychlorinated biphenyls (PCBs), lead-based paint, mercury vapor, and radon gas. These screening surveys give our clients a better perspective on what existing building materials may need to be addressed when planning future occupancy or proper demolition procedures. After receipt of the analytical data for samples collected as briefly described below, CPEG prepares a HazMat Screening Survey Report, including material descriptions, locations, and approximate quantities.

Polychlorinated biphenyls (PCBs)

The CPEG surveyor looks for possible PCB-containing electrical equipment, noting the presence and quantity of fluorescent light ballasts and/or transformers. The equipment labeling, where accessible, is evaluated for indication of PCB content. In the absence of definitive non-PCB labeling, the equipment is assumed PCB-containing or may be sampled, at the client's option.

Lead-Based Paint

Paint chip samples are collected by the CPEG surveyor for laboratory analysis of lead content. The samples are analyzed by a laboratory accredited under the Environmental lead Laboratory Accreditation Program, which is administered by the American Industrial Hygiene Association. The results are tabulated in the final report as a percentage of lead by weight.

Mercury Vapor

Fluorescent lighting equipment may contain mercury vapor bulbs. The CPEG surveyor visually notes the presence of fluorescent lighting equipment and estimates the number of tubes.

Radon Gas

A radon screening is performed at sites where an existing basement or other sub-grade, normally-occupied space is planned for renovation. The screening is conducted by placing activated charcoal canisters for a period of one to four days. The canisters are collected and submitted to a State-certified radon laboratory for analysis.



BROWNFIELD MANAGEMENT / ACT 2 SITE CLOSURE

CP Environmental Group (CPEG) specializes in working with clients during renovations, acquisitions, and divestitures of environmentally impaired sites (brownfields). We have contributed to the success of hundreds of redevelopment projects for our industrial, commercial, and municipal clients by providing a combination of technical excellence, practical experience, and responsiveness. We have obtained closure or are currently in the brownfields closure process for sites located in Illinois, Indiana, New Jersey, New York, Ohio, Pennsylvania, and West Virginia.

CPEG associates began working on Pennsylvania Land Recycling Program (Act 2) projects before the final guidelines for implementing the Act were published by the Pennsylvania Department of Environmental Protection (DEP). The key to identifying optimum solutions for our clients then was developing good working relationships with DEP case managers so that we could learn and help guide their individual interpretations of the Act. Since that time, CPEG has worked on a variety of projects within the Act 2 framework, including over 60 projects directly within the Chapter 250 guidelines, and over 80 projects within the Chapter 245 UST site guidelines. As such, we have developed extensive experience on projects requiring knowledge of Act 2 and the ever-changing new developments within the associated DEP guidance and interpretation of the Act. The good working relationship we developed with DEP early in the Act 2 history continues to help CPEG succeed in this arena.

The CPEG team has safely addressed separate-phase liquids and a variety of hazardous and non-hazardous contaminants within the brownfields framework, including petroleum products, volatile organic compounds (VOCs), chlorinated solvents, semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenols (PCBs), asbestos, and ammonia. Our expertise within the brownfields framework includes site investigation and characterization; risk assessment and ecological screening; fate-and-transport modeling, including groundwater-to-surface-water discharge modeling; remedial strategy evaluation, selection, and implementation; and demonstration of attainment using background, state-wide health, non-use aquifer, and site-specific standards. This expertise is complimented by the professional licenses of our associates. Our clients rely on CPEG associates and their brownfields expertise to develop and safely implement superior solutions to even their most complex environmental issues in Pennsylvania.



DUE DILIGENCE
(Phase I/II/III Environmental Site Assessments, Remediation & Site Closure)

CP Environmental Group provides value-added site development solutions on a single, multiple services, or turnkey basis so we can meet the specific needs of our valued clients. CPEG commits to being a trusted partner to make our client's project goals a reality in the most economical manner possible. We self-perform and manage the due diligence, environmental management, and remediation activities that are the foundation of site development packages.

All **Phase I Environmental Site Assessments** (ESA) are not created equal. Individuals or organizations lured by a low price and lulled by the apparent security of generic procedures risk significant liability if the assessments they accept are not up to industry standards.

A CPEG Phase I ESA supplies in-depth environmental information about a site, thus minimizing the associated liability and the risk of owning or financing an environmentally impaired site, according to the standard of the American Society for Testing & Materials (ASTM). There is no cost efficiency in skimping on a Phase I ESA.

The purpose of a Phase I ESA is to evaluate the pre-purchase environmental condition of a site, identify recognized environmental conditions, and to comply with the due diligence property inspection requirements of the Innocent Landowner Defense under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 and subsequent amendments. CPEG Phase I ESA services include:

- ASTM Standard (ASTM E-1527)
- Transaction Screen (ASTM E-1528)
- Customized assessments

Conclusions and recommendations are drawn based on the observations and information collected by CPEG. The findings, including conclusions and recommendations, as warranted, are summarized in a written report. If the potential for contamination is discovered in the Phase I ESA, a **Phase II Environmental Site Assessment** may be recommended

A variety of investigation methods are available for performing a Phase II ESA. These methods may include performing geophysical surveys to search for buried metallic objects; collecting and analyzing soil and/or groundwater samples; performing hydrogeological investigations to determine groundwater flow and aquifer properties; performing asbestos, mold, and lead-based paint surveys; and other methods appropriate to respond to the results of the Phase I ESA.

If contamination is discovered, CPEG can continue the investigation to determine the extent of the impact (**Phase III ESA**), and develop and implement a plan to address the impacts, keeping in mind the environmental regulations and their application to the planned use for the site. CPEG solutions are described on "**Remediation Engineering, System Installation, Operation and Maintenance**", "**Business Solutions**" and "**Management Strategies**" pages.

CPEG associates have a solid history of determining the best business solution (cost-effective, time-sensitive) for environmentally-impaired properties identified during the due diligence process. By assisting with our clients' profitable growth through site development excellence, we achieve our vision... *to be the preferred and trusted partner of our clients and associates.*



GEOTECHNICAL CONSULTING / INVESTIGATIONS

Geotechnical subsurface investigations evaluate the properties of the underlying site materials with respect to building design and construction to ensure future stability and safety. These investigations are an integral part of site development. CP Environmental Group (CPEG) relies on technical expertise and skilled project management to provide high quality geotechnical engineering design services. These services include:

- Field testing and geotechnical drilling services
- Geotechnical soil laboratory testing
- Geotechnical design and construction recommendations

Geotechnical services are provided for projects that include structures, pavements, embankments and containment facilities. CPEG provides recommendations for:

- Shallow and deep foundation systems
- Flexible and rigid pavements
- Slope stability
- Retaining walls
- Soils-related construction procedures
- Groundwater control and drainage

For sites which contain poor soil conditions, methods for soil improvement, modification or reinforcement are presented to determine the best suited and most economical solutions. Such techniques include, but are not limited to, the use of geosynthetics, lime or cement stabilization and deep dynamic compaction.

Soil testing is an integral part of geotechnical engineering services. CPEG utilizes laboratory testing to determine:

- Grain size analysis/Atterberg limits
- Moisture-density relationship determination (Proctors)
- California Bearing Ratio (CBR)
- Direct shear
- Flexible wall and constant head permeability
- Percentage of organics determination (Loss On Ignition, LOI)
- One-dimensional consolidation
- Unconfined compressive strength (soil and rock)
- Triaxial shear tests (UU, CU, CD)
- Specific gravity determination
- Resistivity
- Determination of optimum percentage of cement for cement stabilization

A report is then prepared by a geotechnical engineer that presents the findings of the investigation and recommendations based on the intended use, including a site plan and test boring logs. Recommendations included in the report address soil conditions and characteristics, bearing capacities, and anticipated settlements. In addition, general construction recommendations including excavation and backfill requirements, paving design, as well as groundwater conditions and control, can be provided by the geotechnical engineer.



HYDROGEOLOGICAL INVESTIGATIONS

CP Environmental Group's (CPEG) hydrogeological investigation services are crucial in providing innovative techniques to limit potential long-term liabilities. The primary objectives of the hydrogeological assessment are to evaluate the extent of the contaminants, to assess how contaminant phases are affected by hydrogeological conditions, and to provide data necessary to design and implement the appropriate remedial action. CPEG's staff of hydrogeologic professionals provides quality, responsive, and cost-effective assessment services.

CPEG's hydrogeologic services can be utilized in a broad range of projects such as:

- Property audits
- Remedial investigations/ and feasibility studies
- Landfill investigations
- Property transfers
- Storage tank investigations
- Risk assessments

Before implementing full-scale hydrogeologic investigations, our professionals utilize preliminary planning techniques such as:

- Research of peer-reviewed scientific literature
- Soil gas studies
- Soil test pit evaluations
- Photo lineament identification
- Geophysical surveys
- Shallow soil sampling

Aquifer parameters are typically determined after monitoring well installation and development by performing:

- Rising-head slug tests
- Step-drawdown pumping tests
- Recovery tests
- Tracer studies
- Falling-head slug tests
- Constant-rate pumping tests
- Product bail-out tests
- Packer tests

Computer models are also utilized by CPEG to describe time-drawdown, and distance drawdown relationships in confined, unconfined, and leaky confined aquifer systems, and to model contaminant movement. Depending on the complexity of the site conditions and the level of data required, the modeling activities can vary from the analysis of slug test data to the simulation of complex aquifer systems.

If modeling is desired, it can be invaluable in performing:

- Geochemical assessments
- Well placement optimization
- Remedial alternative simulations
- Hydrogeological impact assessments
- Contaminant migration evaluations
- Remedial system designs



MOLD INSPECTION AND AIR MONITORING

Mold is considered by many in the environmental industry as “the new asbestos” due to its pervasiveness in buildings, potential toxic side effects, and its recent entry into the environmental arena, yielding a problem without regulations that specify standard methods for addressing. Many high profile mold-related lawsuits have been taken to court and netted million dollar settlements. At the request of our clients, CPEG gained expertise in this area, including the addition of a microbiologist, and has added mold services to our capabilities. CPEG currently performs mold inspections and air monitoring in accordance with the recognized guidance, and manages mold abatement projects.

As long as moisture and oxygen are present, molds can grow on virtually any organic substance. Molds only need a food source to grow and reproduce. Mold can be found any place that moisture can gather; behind walls on drywall, above ceilings, inside HVAC systems, and in carpeting, wood, paper, foods, insulation, basements, and crawlspace areas. Both the United States Environmental Protection Agency and the Center for Disease Control have reported that all molds have the potential to adversely affect health. Specific responses to mold can include allergic and asthmatic reactions, hypersensitivity pneumonitis, and other immunologic effects.

Testing Procedures. There are several procedures that can be used to determine if a mold problem exists. If mold is present and visible, there are two different types of testing that can be done. A tape sample can be taken, or a swab sample can be collected. Using the samples gathered, a lab can grow cultures to determine what types of mold are present.

If mold colonies are not visibly present, air samples can be collected in the area where the potential problem exists. Two types of air sampling methods are used. The first method uses a Zephon cassette. When air is drawn through the cassette, mold spores, if present, are impacted on a slide, which is then used to grow cultures. With Zephon cassettes, only the total number of spores present in the air can be determined. The second method uses an Anderson impactor, with which spores are also impacted on a slide and then grown. This method, however, enables the lab to differentiate the types of spores present in the air sample. For large mold manifestations or to be sure that mold does not return, it's wise to contact a trained professional to conduct a thorough investigation.

Regulations. Currently, there are no regulations for the amount of spores permissible in the air, and there are no regulated standards used for the testing of molds. However, in 1994 the New York City Department of Health, Bureau of Environmental and Occupational Disease Epidemiology, published *Guidelines on Assessment and Remediation of Fungi in Indoor Environments* (NY guideline), which serves as the accepted standard for managing mold. The NY guideline establishes that a contamination zone of 30 square feet or larger requires personnel trained to handle hazardous materials, respiratory protection, and special containment procedures. It concludes that “prompt remediation of contaminated materials and infrastructure repair is the primary response to fungal contamination in buildings.” In addition, the Occupational Safety & Health Administration (OSHA) has published a Safety and Health Information Bulletin on mold. Although several other guidelines and informational papers have been published regarding mold, the New York guidelines remain the generally accepted document. Even though no regulation has been promulgated, employers can still be cited by OSHA under the General Duty Clause for not taking reasonable steps to prevent or abate mold.



RECLAMATION AND COMPLIANCE MANAGEMENT

Site reclamation is playing an increasingly significant role in projects where surface disturbance has occurred, whether from industrial processes, mining or hazardous/residual waste remediation. Site reclamation involves a comprehensive approach to accomplish one of two goals: 1) return a site to near pre-disturbance conditions; or, 2) reclaim a site in accordance with local, state and federal regulations in consideration of developing proper slopes, erosion control measures, capping features (if necessary), and vegetative cover. Sites that typically involve the attempt to return conditions to pre-land disturbance conditions include small-scale waste burial sites (e.g., drums) and underground storage tanks where surface conditions can be returned to near original. However, most reclamation projects entail large areas of land disturbance which preclude the feasibility of trying to reclaim to original conditions because of pit excavations (e.g., surface mining, large waste piles from the storage of by-products created in industrial processes, landfills). Proper site reclamation can also be the final step in receiving bond release (e.g., mining industry) or 'No Further Action' (e.g., some environmental remediation projects such as hazardous waste removal).

CP Environmental Group (CPEG) realizes the key to successful reclamation is proper project planning and site preparation. Project planning provides for a cost-efficient reclamation program designed and executed to achieve proper site closure. Improper site preparation is a common aspect of old facilities that have sat idle for many years. Proper site preparation involves factors such as addressing unstable slopes and site drainage (such as acid mine drainage from coal tailings piles) before reclaiming or capping a site, as opposed to just 'filling over' unstable areas. Proper site preparation can address numerous post-closure problems related to slope failure, cap integrity and site effluent discharge.

Reclamation Services

CPEG associates offer cost-effective approaches in addressing the proper regulatory reclamation of environmentally disturbed excavation sites.

- Performing site due diligence hydrogeologic and engineering studies of existing site conditions.
- Developing and coordinating cost-effective, regulatory compliant site reclamation design plans.
- Coordinating contractor bid process.
- Providing cost-effective field reclamation/site capping management.
- Performing hydrogeologic evaluation / assessment and Acid Mine Drainage remediation system design in support of coal mine reclamation.
- Coordinating surface facilities demolition.
- Coordinating wetlands, archaeological, socioeconomic and transportation studies in support of permitting.
- Giving presentations at Public hearings and working with citizens groups.
- Acting as liaison with environmental agencies for permitting, construction and compliance activities.
- Performing environmental (air, surface, groundwater, and leachate) and engineering (liner construction, waste placement, capping and surface drainage) compliance monitoring, statistics, and reporting.
- Performing post-Closure environmental monitoring.



REMEDATION ENGINEERING, SYSTEM INSTALLATION, AND O&M

The successful implementation of a treatment system or combination of systems to remediate soil and/or groundwater contamination depends on a comprehensive understanding of a site's hydrogeologic conditions and soil/water chemistry. CPEG professionals and associates have experience using site environmental and hydrogeologic data to evaluate various remediation technologies. When evaluating technologies and costs, regulatory compliance and long-term facility planning are also considered. In addition, risk assessments can be performed to identify and to quantify site-specific potential liabilities and facilitate permit applications. Overall remediation costs can be reduced through the selection of technically feasible and cost-effective alternatives that comply with applicable regulated clean-up goals. Once a site is characterized, our remedial specialists and engineers develop recommended remedial solutions by dividing this task into four key steps:

1. Establishing clean-up objectives
2. Evaluating remedial alternatives
3. Selecting remedial alternatives
4. Preparing remedial designs

Our professionals are experienced in the design, implementation, and operation and maintenance of various soil and groundwater treatment technologies such as:

- Excavation and off-site disposal/treatment
- Soil vapor extraction
- Chemical fixation
- Air sparging / Biosparging
- Land farming
- Oil/water separation
- Air-stripping
- Ultra-violet/chemical oxidation
- Isolation/containment
- Soil flushing
- Soil washing
- Bioremediation
- Separate-phase product recovery
- Pump-and-treat (wells and/or recovery trenches)
- Activated carbon adsorption

REMEDATION SYSTEM TROUBLESHOOTING AND OPTIMIZATION

Many existing remediation systems are unable to achieve site closure in a reasonable time frame. The cost of operating an improperly designed treatment system can at times exceed the cost of redesigning the system so that it can effectively achieve site closure. Troubleshooting a problematic system involves review of the regulatory clean-up goals, evaluation of both the aboveground and below ground construction, and evaluation of the operation and maintenance of the system. Remedies range from optimization of the system operation and maintenance to the last resort of system redesign. In some cases, simple modifications to the aboveground equipment can result in major reductions in the cost and time to closure. CPEG professionals can provide full cost-benefit and time-to-closure analyses for any modifications to allow clients to evaluate the modifications from both an economic and a risk standpoint.



STORAGE TANK MANAGEMENT

Storage tank management is a regularly performed service by CP Environmental Group (CPEG) even though the 1998 deadline for UST upgrade compliance has come and gone. Our storage tank facility related services include:

- **Removal** – Removal Permits, Notifications, Utilization of Certified Professionals, Reimbursement Fund Application, Waste Management, Verification Sampling, Documentation and Reporting.
- **Investigation** – Phase I/II/III Environmental Site Assessments, Modeling, Hazardous Material Surveys, Geotechnical Engineering.
- **Environmental Management** – Risk Assessments, Site Remediation (in-situ/ex-situ), Regulatory Compliance/Permitting/Auditing, Stormwater Management (NPDES), Brownfield Management and Financial Grant Assistance, Asbestos Abatement and Facility Demolition Management.
- **Design/Build** – Fuel System Design, Installation Management, Project Management and Construction Materials Testing.

When environmental impacts are encountered, CPEG applies our expertise in performing environmental investigations and providing site closure solutions. Experience and consistent quality performance are the necessary foundation to achieve environmental liability protection at the lowest cost. A critical element in reducing our clients' costs for addressing environmental impacts at storage tank sites is full use of available reimbursement funds. Maximizing reimbursement comes down to one word – **Planning**:

1. Verifying the existence of a reimbursement fund in the project state for the type of work being performed.
2. If a program exists, checking with the client to ensure that all the paperwork and fees needed to be eligible for reimbursement (in case impacts are encountered) are in place.

In some instances, just that check alone, before the project began, has enabled our clients to become eligible for reimbursement that they would have otherwise been denied had the project started without the appropriate fees being paid or paperwork being submitted. Once the reimbursement program is verified and the required paperwork/fees submitted, CPEG managers make it a point to know the reimbursement rules to maximize client reimbursement. Example procedures that have helped to maximize our clients' allowable reimbursement have included having subcontractors direct bill our clients to eliminate non-reimbursable consultant mark-up; charging subcontractor management and invoice review time on a time-and-materials basis; and acquiring pre-approval of remediation costs, if required by the applicable fund, since some state funds may disallow a percentage of the reimbursement costs regardless of the success of the technical approach or regulatory approval of the remediation plan.

In recognition of our success in storage tank management, CPEG's President was invited to be the guest speaker on "Innovative Remediation Alternatives for the Trucking Industry" at the Terminal Properties Exchange Conference. This conference is designed specifically for the Trucking Industry whose typical attendees represent the Top 100 Trucking Companies in the U.S. She has also presented storage tank site remediation strategies at other conferences and meetings, including the Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Prevention, Detection, and Remediation Conference, sponsored by API and NGWA.



WASTE DISPOSAL MANAGEMENT, PERMITTING AND COMPLIANCE

The management of non-hazardous and hazardous waste, including characterization, remediation and proper disposal, continues to be a concern in America today. The CP Environmental Group (CPEG) team is experienced in providing cost-effective approaches for handling the permitting, regulatory and disposal issues related to both non-hazardous and hazardous wastes.

Non-Hazardous Waste Disposal Facilities

CPEG associates have been involved in the permitting, construction, operational compliance and closure of solid waste facilities. These activities have included:

- Pre-site selection due diligence hydrogeologic and engineering studies.
- Hydrogeologic evaluation / assessment and monitoring system design in support of permitting and groundwater remediation.
- Coordinating wetlands, archaeological, socioeconomic and transportation studies in support of permitting.
- Presentations at Public hearings on permit issuance.
- Agency liaison for permitting, construction and compliance activities.
- Cell construction supervision.
- Environmental (air, surface, groundwater, and leachate) and engineering (liner construction, waste placement, capping and surface drainage) compliance monitoring, statistics, and reporting.
- Closure and post-closure capping and environmental compliance.
- Coordination of special waste transportation and disposal.
- Disposal facility audits in support of property transfer and financial assurance bonding.

Hazardous Waste Disposal Facilities

Over the past 15 years, CPEG professionals have provided services for Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response Compensation Liability Act (CERCLA) projects, as well as for operating industrial facilities in the assessment, remediation and disposal of hazardous waste. Services provided include:

- Evaluation and delineation of hazardous waste sites, work plan development, removal of drums and impacted soils.
- Assessment and remediation of impacted soil and groundwater.
- Coordination of cost-efficient waste excavation, transportation and disposal.
- Coordination of waste disposal services for hazardous waste generating facilities.
- Regulatory interaction with the United States Environmental Protection Agency (US EPA), State and Local agencies in the permitting, remediation and closure of numerous project sites.



TEAM MEMBER PROFILES

CP Environmental Group associates provide effective and creative business solutions to a wide variety of complex environmental challenges. The experience of the team committed to a project is a critical ingredient in ensuring that the project goals and performance expectations are achieved. The CPEG team of professionals has the knowledge, experience, and commitment to client service to excel in our role on your important project. We are confident you will find our team experienced and capable.

CPEG's team combines their due diligence / site development skills with progressive teamwork strategies, to bring our clients cost-effective business solutions to their environmental challenges. Our team members have performed well on high-stress projects with tight deadlines, have found innovative ways to reduce the impact of identified environmental impairments on construction schedules, and have aided eligible clients in obtaining public funding for their site development projects. Our success is due to the commitment of our associates to understand the project goals and associated regulations, apply the regulations effectively, and provide clients with the service and quality that will ensure the highest degree of client satisfaction.

Included in the following pages are resume profiles from select members of the CPEG business solutions team. Our team is represented by individuals having 3 to 20 years of experience in due diligence and site development projects from initial assessment through environmental site closure. The profiles present a cross-section of example projects that each individual performed including cost-saving highlights of the projects as warranted.

Look to CPEG as your single source for business solutions to environmental, site development and environmental site closure projects.



SPECIAL QUALIFICATIONS . . .

- ü B.S. Geology, Marshall University, 1986
- ü Graduate Level Course Work, Marshall University, 1986
- ü Professional Geologist – Pennsylvania
- ü Certified Professional Geologist – Indiana
- ü Expertise in permitting of highly controversial and complex commercial and industrial projects
- ü Over 16 years experience in development and management of hydrogeologic studies in support of permitting, construction, compliance and remediation of complex commercial and industrial projects
- ü National Groundwater Association Member
- ü Society of American Military Engineers Member
- ü National Association of Industrial and Office Properties Member

PROJECT EXPERIENCE

Phase I and II Environmental Audits/ Assessments, Local, National and International Corporations, OH, FL, IN, IL, KY, PA, FL, GA, SC and MI - Project Manager/Senior Project Review. Performed, managed and provided senior technical review for numerous environmental/hydrogeologic Phase I and II environmental audits in support of property transactions for commercial and industrial facilities including automotive, chemical, creosote wood processing, foundry and heavy manufacturing operations.

Pre-Acquisition Due Diligence Audits for Solid Waste Landfill and Hauling Facilities, Mid-American Waste Systems, Inc., OH, WV, PA, IN, KY, VA, TN, SC, AL, MI, VT, MA, MN, IL, FL, GA, IA, NY, CA, NM, AZ and CO - Manager of Environmental Engineering/Corporate Hydrogeologist.

Conducted pre-acquisition environmental and engineering audits for solid waste landfills and associated waste hauling companies at approximately 75 facilities. Audits involved assessment of environmental, hydrogeologic and engineering compliance in accordance with applicable local, state and federal regulatory standards in support of potential financial liabilities and developmental prospects as part of due diligence for prospective acquisitions.

Paint Waste Drum Excavation and Remediation, International Chemical Manufacturing Corporation, Licking County, OH - Site Manager. Coordinated and managed removal of 995 drums of buried hazardous paint waste and 750 roll off boxes of associated impacted soils from a rural farm site in central Ohio. Coordinated all drum removal and impacted soil excavation, waste transportation and disposal activities. Liaison with United States Environmental Protection Agency – Region V, Ohio Environmental Protection Agency and Licking County Health Department. Overall project budget was in excess of \$6 million.

Geologic and Hydrogeologic Investigations, Local, Regional, National and International Corporations, OH, FL, IN, IL, KY, PA, FL, GA, SC and MI - Project Manager/Senior Technical Review. Conducted, managed and provided senior technical review for geologic and hydrogeologic investigations at numerous commercial and manufacturing facilities including automotive, chemical, creosote wood processing, foundry, electronics manufacturing and heavy manufacturing operations in support of assessing soil and groundwater contamination from facility operations and the development of remediation strategies.



Removal of 200 Hazardous Waste Drums, Mid-American Waste Systems, Inc., Southwest Pennsylvania, Manager of Environmental Engineering/Corporate Hydrogeologist - Project Manager. Managed for excavation of over 200 buried industrial hazardous waste drums, and removal of associated impacted soils as well as disposal on property located in the proposed area of expansion of an existing solid waste landfill.

Hydrogeologic Assessments, Mid-American Waste Systems, Inc., OH, WV, PA, IN, KY, SC, IL, FL, GA, CA, NM and CO - Manager of Environmental Engineering/Corporate Hydrogeologist, Project Director. Directed hydrogeologic investigations and compliance monitoring and remedial system design and implementation in support of permitting approximately 45 solid waste landfills in. Hydrogeologic investigations were conducted in various geologic media including coastal sedimentary, unconsolidated and consolidated sedimentary, glacial, granitic fracture flow and karst environments.

Post- Closure Solid Waste Landfill Financial Assurance Audit, Forest Service District, DuPage County, IL - Project Manager. Performed consulting engineering and hydrogeologic audit of nine closed municipal solid waste landfills in Illinois in support post-closure financial assurance funding.

Pre-Acquisition Due Diligence of Construction/Demolition Landfill, MK Adkins & Associates, Southeast Ohio - President. Performed due-diligence facility and operational audit for acquisition of a construction demolition landfill in southeast Ohio.

Removal and Remediation of Underground Storage Tanks, Regional and National Corporations, FL, GA and SC - Field Geologist and Project Manager. Managed and performed the consulting environmental assessment and removal of numerous underground storage tanks at industrial facilities as well as excavation of impacted soils and remediation system design for degraded groundwater in northern and central Florida. Project Manager for the hydrogeologic assessment, underground storage tank removal and excavation of diesel impacted soil for a major concrete manufacturer in northeast Florida.

Permitting and Compliance for Industrial Facilities, Regional, National and International Corporations, FL, GA, OH, PA - Project Manager/Senior Technical Expert. Successfully negotiated solutions to permitting and regulatory consent orders in the solid waste industry as well on behalf of industrial clients.

Groundwater Resource Assessments, Mid-American Waste Systems, Inc., OH, WV, PA, IN, KY, SC, IL, GA, CA and NM - Manager of Environmental Engineering/Corporate Hydrogeologist. Management of hydrogeologic investigations to evaluate potential effects of to local groundwater resources from proposed and existing solid waste facilities in consideration of developing operational monitoring and remedial systems

Facility Environmental Management for Subtitle D Municipal Solid Waste Landfills, Mid-American Waste Systems, Inc., OH, WV, PA, IN, KY, VA, TN, SC, AL, VT, MA, MN, IL, FL, GA, IA, NY, TX, LA, CA, NM, AZ and CO - Manager of Environmental Engineering/Corporate Hydrogeologist. Performed and managed engineering and hydrogeologic environmental activities in support of permitting, construction, compliance, remediation, closure and post-closure activities and pre-acquisition due diligence for over 70 municipal solid waste landfills and hauling companies. Management and administration of annual budgets in excess of \$20 million.



SPECIAL QUALIFICATIONS . . .

- ü B.S., Chemical Engineering, The University of Pittsburgh, 1979
- ü Ohio, Department of Commerce, Division of State Fire Marshall – Underground Storage Tank Installer.
- ü Over 18 years of experience with the management and execution of environmental projects including: Phase I and II Environmental Site Assessments, remediation, decontamination, demolition, waste management, underground storage tank closures, geotechnical investigations, asbestos inspections and abatement.
- ü Ten years of radiological experience including the decontamination and decommissioning of process equipment and facilities.

PROJECT EXPERIENCE**Phase I and II Environmental Site Assessments, Geotechnical Investigations, Asbestos Surveys and Construction Materials Testing, of a Food Chain, Western Pennsylvania - Project Manager.**

In accordance with American Society for Testing and Materials 1527-00, completed Phase I and II Environmental Site Assessments of locations identified for new construction or redevelopment. Additionally, managed asbestos surveys, geotechnical investigations, and construction materials testing for these locations.

Phase I Environmental Site Assessments and Environmental Compliance Audits, Various Clients, Illinois, Maryland, Michigan, Pennsylvania, Wisconsin, and Puerto Rico - Project Engineer.

Completed numerous Phase I Environmental Site

Assessments and Environmental Compliance Audits of numerous facilities (e.g., forges, manufacturing plants, warehouses, retail stores, service stations, automobile dealerships, office buildings, restaurants, and residential developments).

Groundwater Remediation System, Former Rail Yard, Handley, West Virginia - Project Manager/Engineer. Directed the installation and start-up of the soil vapor extraction and diesel fuel recovery systems. The project was completed \$15,000 under budget. Subsequently, managed the operations and maintenance contract.

Demolition and Environmental Closure, Former Rail Yard, Punxsutawney, Pennsylvania - Project Manager. Managed the environmental closure of the former rail yard in Punxsutawney, Pennsylvania. Supervised a crew of four equipment operators and four laborers in the environmental cleanup and demolition of buildings and structures, arranged for the disposal of various residual wastes, and prepared the Audit Implementation Report documenting the site closure activities.

Underground Storage Tank Systems Closure and Remediation, Various Clients, Ohio, Pennsylvania, West Virginia, and Wisconsin - Project Engineer. Directed and/or managed the closure of petroleum, waste oil, and hazardous waste underground storage tank systems. Approximately 35 underground storage tanks closed.



Aboveground Storage Tanks, Petroleum Hydrocarbon Resins Manufacturer, Pittsburgh, Pennsylvania - Project Engineer. Directed the replacement, repair and upgrade of aboveground storage tank systems. Prepared the bid specifications, managed contracts, and supervised contractors to complete tank clean-out, lead paint abatement, asbestos abatement, tank demolition, foundation construction, tank fabrication, re-piping, and re-insulation.

Remediation System Permitting, Former Refinery Site, Rouseville, Pennsylvania - Project Engineer. Prepared the applications and secured the National Pollutant Discharge Elimination System Permit (PAG-5) and Encroachment Permit (GP-4) for the liquid effluent discharge from a groundwater remediation system. Determined that the proposed groundwater remediation system design, operation, maintenance, and monitoring met the Air Quality Permit Exemption criteria and qualifications.

Environmental Compliance/Management, Major Coke-Making Facility, Clairton, Pennsylvania - Resident Engineer. Conducted the day-to-day implementation of environmental regulations, the preparation of appropriation requests, and the management of storage tanks, polychlorinated biphenyl transformers, residual wastes, hazardous wastes, and asbestos abatement. Prepared the plant's Environmental Emergency Response Plan and assisted with the preparation of the Spill Prevention and Response Plan.

Decontamination and Decommissioning, Research & Development Laboratory, West Mifflin, Pennsylvania - Radiological Engineer. Direct supervision of six radiological monitoring technicians and fifteen decontamination technicians in the decommissioning and decontamination of nuclear laboratory facilities. Prepared Radiological Work Procedures containing radiation exposure estimates, decontamination techniques, and the specification of radiological controls. Additional responsibilities included the preparation of project budgets, construction schedules, work site safety audits, and the presentation of monthly safety meetings.

Decontamination and Demolition, Electric Arc Furnace Flue Dust Processing Facility, Blytheville, Arkansas - Project Manager/Project Engineer. Supervised twelve technicians and equipment operators in the decommissioning and subsequent demolition of an electric arc furnace flue dust processing facility. Project value was approximately \$300,000.

Radiological Delineation, Electric Arc Furnace Flue Dust Processing Facility, Jackson, Tennessee - Project Manager/Project Engineer. Coordinated the radiological investigation of the facility. Although intended to parallel the Blytheville, Arkansas project, radioactive contamination was encountered. Subsequently, revised the work plan and directed a crew of six radiological monitoring technicians to perform the preliminary radiological surveys to delineate the extent of contamination of the steel mill's dust collection system.

Demolition Management, Automotive Stamping and Assembly Plants, Kenosha and Milwaukee, Wisconsin - Project Engineer. Conducted an environmental audit and site assessment of the five facilities. Prepared bid specifications and budgetary estimates for the environmental decommissioning and demolition of automotive stamping and assembly plants.



SPECIAL QUALIFICATIONS . . .

- Û B.S., Chemical/Biomedical Engineering, 1990.
- Û Engineer Officer Basic Course, 1991.
- Û Over 13 years experience in environmental engineering including design/operation and maintenance of hydrocarbon and hazardous chemical remediation systems, supervising system installations, review of site work plans, safety plan development, and implementation/oversight.
- Û In-depth bio-remediation experience and has developed custom testing procedures for bench scale testing of hydrogen peroxide and Fenton's reagent treatment of organic compounds.
- Û Developed new remediation methods that were eventually patented (U.S. Patents 5,400,858 and 5,452,765).
- Û Provided engineering design training as an expert in the field.
- Û Designed groundwater treatment systems that use sparge tanks and porous settling media to reduce overall iron levels. This eliminated the need for pH adjustment, reduced system complexity, and increased worker safety by avoiding the need to handle hazardous treatment chemicals.

PROJECT EXPERIENCE

Remediation System Design Review and Redesign, Bulk Terminal, Pittsburgh, Pennsylvania - Project Engineer. Reviewed the remediation system design specifications prepared for this high-profile project that was under Pennsylvania Department of Environmental Protection scrutiny and identified design flaws. Revised the design plans and developed a system that saved the client over \$500,000 in installation/construction costs while increasing hydrocarbon removal efficiency.

Groundwater Treatment Plant Design and Installation, Former Refinery, Emlenton, Pennsylvania - Project Engineer. Designed and supervised installation of a treatment plant for recovered groundwater and product at a former refinery. Groundwater containing 20 mg/L of dissolved iron was reduced to less than 4 mg/L (permitted discharge limit) through the use of custom designed passive iron removal unit. The custom system eliminated the need for chemical pH adjustment and oxidation, thereby reducing the system complexity and avoiding the need to handle hazardous chemicals.

Remediation of System Design and Installation, Former Refinery, Hercules, California - Designer/Supervisor. Designed and supervised the installation of a 98-recovery well remediation system at a former refinery. Treatment technologies included soil-vapor extraction, pneumatic total-fluids pumping, and air injection. System included the use of a variable speed drive on the 200-hp soil-vapor extraction blower to achieve power consumption minimization. Site was remediated within one year of system operation.

Remediation System Design via Horizontal Wells, US Navy, Illinois - Project Engineer. Designed/managed installation of a horizontal well biosparging system which increased the volume and flow of oxygen to the plume. The increased activity by the bio-organisms resulted in an increased cleanup rate. Application of this technology permitted remediation of a hydrocarbon plume that had traveled under an active railroad line, resulted in minimal disruption to the GLNTC and surrounding base activities, and ultimately saved the Navy more than \$1M over traditional remediation techniques.



Remediation System Design, Former Air Force Base, San Antonio, Texas - Remediation Design Engineer. Designed three remediation systems at a former air force base. Implemented applicable remedial technologies, including soil-vapor extraction, air injection and pneumatic total-fluids pumping.

Remediation System Design, Trucking Terminal, Mobile, Alabama - Design Team Manager. Responsible for the design team for a 300-gpm water treatment system to remediate a dissolved-phase carbon tetrachloride plume. Also performed all process engineering on the project. The system included the installation of 5,000 feet of pipeline, a fluidized-bed air stripper, and a clarifier basin. Treated water was reinjected downgradient to aid in immobilizing the mile long plume.

Water Treatment Plant Design, Plastics Molding Plant, Wharton, Texas - Design Team Manager. Responsible for the design team for a water treatment plant at a plastics molding plant. The design team included engineers from the following disciplines: structural, civil, electrical, and process. The system was designed to treat all wastewater generated on site. Treatment equipment included a dissolved-air flotation unit, sand filtration, and sludge treatment. Design challenges included widely varying flow rates, the presence of both Light Nonaqueous Phase Liquids and Dense Nonaqueous Phase Liquids, and sludge/particulate handling. System installation is scheduled for November of 2002.

Chemical Oxidation Treatment Testing – Chemical Engineer. Wrote new testing procedures for the bench-scale testing of hydrogen peroxide and Fenton’s reagent treatment of organic compounds. The new testing procedures reduced the reaction rate by eight times which reduced the heating of the mixture. This change resulted in a lower volatilization of the contaminant during the testing which allowed a more accurate evaluation of the technology. By tailoring the procedures to existing analytical laboratories, the overall costs of the testing were greatly reduced.

Corporate Engineering Representation, Petroleum Corporation, Houston, Texas - Project Manager. Responsible for design, constructability review, construction management, and operations and maintenance oversight for all environmental remediation systems for Pennzoil Corporation. Work included evaluation and optimization of all existing treatment systems.

Gasoline Plume Remediation, University Site, Lubbock, Texas - Process Engineer/Process Construction. Separated drinking and irrigation water supply lines on campus. Installed a 280 gallon per minute (gpm) pump in former drinking water supply well. Recovered hydrocarbon impacted groundwater was pumped to a treatment system prior to discharge to provide on-demand irrigation water for the campus.

Publications/Presentations

Mastroianni, John, Blanchard, Charles, Hackenberg, Tyson and Morse, John, 1994 - “Equipment Design Considerations and Case Histories for Accelerated Clean-up Using Vacuum Enhanced Pumping” The American Defense Preparedness Association 20th Environmental Symposium and Exhibition Proceedings, Volume II.

Hackenberg, Tyson, Mastroianni, John, Blanchard, Charles, and Morse, John, 1994, - “Analysis Methods and Design of Vacuum Enhanced Pumping Systems to Optimize Accelerated site Cleanup” Federal Environmental Restoration III & Waste Minimization II Conference & Exhibition Proceedings.

Patents

Groundwater Recovery System: U.S. Patents 5,400,858 & 5,452,765



SPECIAL QUALIFICATIONS . . .

- Ü M.S. - Geology - University of Pittsburgh - 1990
- Ü B.S. - Geology - Weber State College - 1980
- Ü Over 15 years of experience in the environmental consulting field at levels of increasing responsibility as a project geologist/hydrogeologist and project manager.
- Ü Pennsylvania Professional Geologist PG-000445-G
- Ü Certified Professional Geologist: American Institute of Professional Geologists, CPG No. 8209
- Ü Expertise includes: project management, remedial investigations and actions, prepurchase environmental site assessments, client liaison, coordination with regulatory agencies, proposal and report preparation, field and health/safety operations and borehole geophysics interpretation.

PROJECT EXPERIENCE

Phase I and II Environmental Site Assessments, Various Clients and Locations - Project Manager. Served as project manager for environmental assessments, Phase I and Phase II soil and groundwater contamination assessments involving various types of industrial facilities and underground storage tank facilities. Duties included development of work plans and cost estimates, supervising the project team throughout field activities and report preparation.

Phase I and II Environmental Site Assessments, Various Clients and Locations - Project Manager/Geologist. Managed and conducted Phase I Environmental Assessments at numerous facilities such as: grocery stores, other retail stores (department and home centers), office buildings, printing companies, specialty metals manufacturing and residential developments. Phase I environmental

assessments include site reconnaissance, discussions with facility operators and regulatory personnel, review of regulatory databases, historical maps, aerial photographs and published geological data to determine the potential for detrimental environmental conditions based upon likely past operations and used at the facility. Followed up with Phase II investigations to confirm potential/suspected environmental concerns as required.

Remedial Investigations Pennsylvania Land Recycling Program (Act 2), Various Clients and Locations – Project Manager. Served as project manager for Pennsylvania Act 2 Remedial Investigations and remedial activities to obtain Releases of Liability utilizing Statewide Health Standards, Site-Specific Standards and Background Standards at various sites being redeveloped. Responsibilities included preparation of the work plans, developing cost estimates, directing the investigations and implementation of remedial actions and attainment monitoring, management of the project team, periodic reporting to clients and state regulatory agencies, contracting and coordination of subcontractors, preparation of the Remedial Investigation Reports and Final Reports, liaison between the clients, state regulatory agencies and municipalities, public notification and negotiating closure goals with state regulatory agencies. Additional activities related to the redevelopment of selected sites include coordination and/or managing geotechnical subsurface investigations, asbestos surveys, asbestos abatement, and demolition activities.

Underground Storage Tank Systems Closure and Remediation, Various Clients and Locations - Project Manager. Served as project manager for petroleum contamination investigations and remedial activities at underground storage tank facilities. Responsibilities included preparation of the work plans, developing cost estimates, directing the investigations and implementation of interim remedial actions, management of the project team responsible for the operation and maintenance of recovery and treatment systems, periodic reporting to state regulatory agencies and local sewer authorities, contracting and coordination of subcontractors, preparation of the Site Characterization



Reports and Remedial Action Plans, liaison between the clients and state regulatory agencies and negotiating closure goals with state regulatory agencies.

Remedial Investigation, Adhesive Manufacturing Facility, Edison, New Jersey - Project Geologist. Project geologist for a remedial investigation of an adhesives manufacturing facility. Responsibilities included work plan preparation, conducting and supervising field investigations including soil, ground water surface water and stream sediment sampling, monitoring well installation, sampling of investigation derived wastes, selection and coordination of subcontractors (drilling, Geoprobe, analytical, survey), data interpretation and the preparation of the report text, figures and tables. Interacted with New Jersey Department of Environmental Protection personnel, clients, subcontractors, and staff level Delta personnel.

Remedial Investigation, Surfactant Manufacturing Facility, Geneva, New York - Project Geologist. Project geologist for a remedial investigation of a facility that manufactures cleaners and sanitizers for the dairy and food processing industries. Responsibilities included work plan preparation, conducting and supervising field investigations including soil, ground water sampling, installation of temporary monitoring wells, selection and coordination of subcontractors (Geoprobe and analytical), data interpretation and the preparation of the report text, figures and tables. Interacted with clients, subcontractors, and staff level Delta personnel.

CERCLA Remedial Investigation, Fastener Manufacturing Facility, Cleveland, Ohio - Project Geologist. Lead geologist for the installation of the monitoring well system and conducting groundwater, soil and waste sampling activities at a facility that had manufactured fasteners and fork lift trucks. The project was part of a Remedial Investigation (RI) performed under the Comprehensive Environmental response, Compensation, and Liability Act (CERCLA) regulations. Also involved in the development and implementation of the remedial action plan for site cleanup and maintained the documentation for private party cost recovery action conducted under section 106 of CERCLA.

Underground Storage Tank Remediation and Closure, Gasoline Station, Virginia - Project Manager. Served as project manager and obtained site closure of a gasoline station in Virginia following negotiation with the Department of Environmental Quality and a follow-up soil investigation to determine the current levels of soil contamination.

Underground Storage Tank Systems Upgrades and Installation, Various Clients and Locations - Project Manager. Managed and supervised the upgrading of underground storage tanks to meet 1998 Underground Storage Tank (UST) regulations including the installation of overfill protection, cathodic protection and continuous monitoring devices. Piping systems for the USTs were also upgraded to meet the 1998 regulations. Managed and supervised the removal of underground storage tanks and contaminated soil. Recommended and coordinated cost-effective disposal options for contaminated soil.

Superfund Remedial Investigation, Landfill Site, Confidential Client and Location - Field Manager. Field manager for pre-design investigation field activities conducted at a former landfill, SUPERFUND site. Activities included monitoring well installation and development, aquifer testing, borrow soil evaluation, soil gas survey, and sampling of groundwater and surface water. Interacted with U.S. Environmental Protection Agency (USEPA) and Pennsylvania Department of Environmental Protection personnel, USEPA oversight contractors, PRP group coordinator and subcontractors and field personnel; insuring that the work plan was strictly followed; functioned as sample custodian and site health and safety officer. Also involved with the daily documentation of site activities and the preparation of the remedial design report.



SPECIAL QUALIFICATIONS . . .

- ü B.S., Geology, Computer Science and Mathematics, Waynesburg College, 1984
- ü M.S. Geology Coursework, West Virginia University, Morgantown, West Virginia
- ü Professional Geologist - Registered Pennsylvania, Certified AIPG
- ü Certified Hazardous Materials Manager, Institute of Hazardous Materials Management
- ü Licensed Remediation Specialist, West Virginia
- ü Registered Environmental Manager, National Registry of Environmental Professionals
- ü Proven hands-on environmental consulting and project/office management record (over 18 years total)
- ü Experienced in effectively applying applicable regulations to achieve client goals, including Pennsylvania Act 2, Chapter 250 and Act 32, Chapter 245
- ü Geologic, hydrogeologic, compliance, and remediation experience complemented by computer applications knowledge and management capabilities

PROJECT EXPERIENCE

Site Assessments and Corrective Action Plan Implementations, Commercial Transportation Client, PA, OH, NY, WV - Project Manager. Responsible for site assessments and corrective action plan implementations at multiple client facilities including monitoring well design and installation, field screening, soil and groundwater sampling, aquifer testing, plume delineation, separate-phase product recovery, Storm Water Pollution Prevention Plans, Spill Prevent Control and Countermeasure Plans, National Pollutant Discharge and Elimination System permitting, and associated report preparation (included regulatory agency interface and subcontractor management). Managed multiple projects concurrently. *Received an outstanding service award from the client for work performed.*

Environmental Site Assessments, Multiple Commercial / Industrial Clients, PA, OH, NY, WV, NJ – Project Manager. Managed/directed performance of Phase I and II Environmental Site Assessments at multiple commercial and industrial

properties as part of due diligence for real estate purchase, including hazardous materials surveys. Assessed the potential recognized environmental concerns, recommended and performed further investigation when warranted based on the results of the initial investigation, and provided conclusions and recommendations for clients to use as a basis for making real estate transaction decisions. For some impacted sites retained by clients, obtained environmental site closure from regulatory agencies by using brownfield regulatory framework, with and without active remediation.

Conceptual Site Model Development, Site Characterization and Interim Corrective Actions, Active Refinery, Pennsylvania – Project Director. Managed the initial phase of investigation work surrounding two leaking ASTs formerly containing a variety of petroleum products per Chapter 245 regulations. Initiated manual product recovery as an interim corrective action to recover LNAPL. Based on the results of the limited investigation, researched and reviewed available documentation on environmental conditions at the 33-acre 100-year-old active refinery site and developed a work plan to investigate site-wide environmental concerns in accordance with Act 2 and client goals. *Obtained approval from DEP for a phased approach to site investigation to address client concerns regarding capital expenditures.* Directed



implementation of the remedial investigation. Used pathway elimination, groundwater fate-and-transport modelling (including PENTOXSD), and statistical calculations to establish site-specific standards for soil and groundwater impacts, as applicable. *Awarded the second phase of investigation work based on client satisfaction, cost-effectiveness, good working relationship with DEP, and innovative use of available guidance and regulations.*

Historic Data Evaluation and New Release Identification, Gasoline Station, Pennsylvania – Project Director. Reviewed available site investigation data generated by others for a property sale along with subsequent quarterly groundwater monitoring data initially collected due to identification of a minor release. Determined through groundwater modeling, contaminant properties and data trend analysis that the initial concentrations were most likely caused by minor surface spills or tank overfills, but that a separate larger gasoline release had occurred after property sale. Directed preparation of a report to the DEP presenting the data, statistical evaluation, and interpretation. *DEP agreed that the current property owner would be responsible for future assessment work, saving our client additional assessment and remediation costs.*

UST Closure, Site Characterization, Total Fluids Recovery and Enhanced Natural Attenuation/ORC® Application, National Trucking Company, Pennsylvania - Project Manager. Researched/conceptualized appropriate methods for remediating two overlapping dissolved hydrocarbon plumes (one containing benzene and methyl-tert-butyl-ether (MTBE); one containing MTBE only) and managed method implementation. Free product plume was also remediated using this system. Unusual project difficulties: 1) in early 1996, MTBE was a newly targeted parameter with little published remediation research and 2) applicable PADEP regulations (Act 2 and Chapter 245) changed during the design phase and again during system installation. After skimming recovered product, remaining water was discharged without treatment to the sanitary system under a negotiated permit. The plumes were brought into compliance with non-use aquifer statewide health standards in one-quarter of the timeframe projected using other methods. *Successfully negotiated recovered groundwater discharge to the POTW without ex-situ treatment, and achieved reimbursement fund eligibility and payment through complex negotiations.*

Source Removal, Ex-situ Aeration/Bioremediation, SVE using Horizontal Wells, and Groundwater Pump-and-Treat, Real Estate Developer, Pennsylvania - Project Engineer/Manager. Designed, prepared and managed a remedial plan to address gasoline impacted groundwater and soil for a time-sensitive project. Source area impacted soils (approximately 7,000 tons) were excavated and treated ex-situ using aeration/bioremediation. Impacted soils beneath site structures and roadways were treated in-situ using soil vapor extraction via horizontal borings advanced into the excavation sidewalls and piped in sets to a central blower/controller building. Approximately 30,000 gallons of impacted groundwater pumped from the excavation were treated using granular activated carbon and discharged with appropriate permitting to the on-site sanitary sewer system. *The No Further Action determination was obtained from the regulatory agency within the required timeframe.*

Historic Data Review and Remedial Action Completion Report, Gasoline Station, Pennsylvania – Project Director. Reviewed available site characterization, remediation and several years of groundwater monitoring data generated by others for a gasoline release from a UST. Although quarterly groundwater monitoring had been scheduled to continue for at least one year due to exceedence of statewide health standards in the central plume area, determined that the site could



be closed under Act 2 regulations. Directed preparation of a Remedial Action Completion Report (RACR) that demonstrated compliance with residential, used aquifer statewide health standards using a combination of fate and transport modeling, trend analysis, and statistical methods. *The RACR was accepted by DEP for site closure, saving the client years of groundwater monitoring costs.*

Air Sparge and Soil Vapor Extraction System Design Modifications and System Installation, Start-up, Operation and Maintenance, Petroleum and Solvent Bulk Terminal, Pennsylvania – Project Director. Directed a project team retained to provide technical review of an AS/SVE/DVE design prepared by others to address a mixed petroleum and solvent plume in soil and groundwater, including LNAPL. Identified several problems with the original design including use of materials incompatible with the contaminants, pilot testing deficiencies, lack of treatment for water generated during the originally specified dual-phase vacuum extraction system, and inappropriate selection of vapor treatment method. Re-performed the AS/SVE pilot tests to confirm suspected problems and identified additional design flaws including insufficient AS points and excessive SVE points to achieve complete coverage. Subsequently redesigned and installed the system to increase efficiency and reduce costs, and still meet regulatory requirements of Act 2 and consent order deadlines. *Design changes dramatically reduced equipment, materials and O&M costs while maintaining effectiveness. Initial data indicate an average 49 percent reduction in VOC concentrations in just 3 months of system operation.*

Biosparging Application Using Horizontal Directionally-Drilled Wells, Great Lakes Naval Training Center, Illinois – Technical Team Director. Lead a team of remediation engineers and technical specialists to design, install, start-up, and test a remediation system to address a 150-foot-long dissolved BTEX and MTBE plume that migrated off-site from the source area, under an active railway, and onto another downgradient property. The system consisted of two 320-foot-long horizontal directionally-drilled biosparge wells with custom slotted screens and associated blowers, heat exchangers, and control instruments. *This innovative treatment system was the first of its kind approved for use in Illinois by IEPA. The system was installed in half the scheduled time and reduced contaminant concentrations to near compliance within the first year of operation. Use of this innovative technology saved over \$1 million compared to traditional remediation methods.*

Groundwater/Petroleum Treatment Plant Designs and Installations, Former Refinery Sites, Pennsylvania – Project Director. Managed the design, permitting and installation of treatment systems for recovered groundwater and LNAPL at two former refinery sites. The new systems were required since refinery decommissioning included demolition of the existing waste water treatment plant. System designs and permitting were site requirement specific and included cost-saving and efficiency-enhancing measures including: developing custom equipment to reduce elevated natural iron concentrations in groundwater; using an existing facility building to house the treatment system to save costs; replacing existing recovery pumps with more efficient models requiring less maintenance; and installing telemetry for notification of fault conditions. *The client indicated that our design/installation saved them thousands of dollars.*

Groundwater/Product Migration Control Systems Upgrades, Operation and Maintenance, Active and Decommissioned Refinery Sites, Pennsylvania – Project Director. Assembled and direct a team of O&M specialists responsible for maintaining a control system designed to prevent LNAPL migration into adjacent surface water bodies. *Evaluated the existing system and identified upgrades to increase efficiency and safety while decreasing long-term O&M costs.*



SPECIAL QUALIFICATIONS . . .

- B.A. Environmental Studies Geography, Edinboro University of Pennsylvania, 1997
- Six years environmental field experience
- Field Supervision over numerous underground storage tank removals and closure documentation
- Extensive drilling and monitoring well installation experience in Ohio, Pennsylvania, Indiana, Connecticut, New York, and West Virginia
- Significant experiences performing historical data collection and site inspections for Phase I ESA per ASTM recommended practice
- Experienced asbestos building inspector
- Experienced asbestos project supervisor and on site PCM Fiber Analysis
- Experienced in remediation system O&M
- Experienced in Phase II remediation work

PROJECT EXPERIENCE

- Underground storage tank (UST) removals- Various clients and states. Field supervisor-provided full-time removal/environmental oversight of many UST and lift removal and proper environmental sampling for clients including CVS, and small service stations, in Pennsylvania, Ohio, and Indiana.
- Recovery system maintenance and ground water sampling- Unocal, Pennsylvania. Performed monthly treatment system compliance, groundwater sampling and recovery system oversight.
- Multiple subsurface drilling investigations, various clients and states. Provided documentation of drilling activities using hollow stem auger, Geoprobe, air rotary and concrete coring for Sears, CVS, YUM Brands in Pennsylvania, Ohio, Indiana, Connecticut, and New York.

ASBESTOS SURVEYS

- Numerous asbestos surveys, multiple Pennsylvania, Ohio, West Virginia, and New Jersey locations. Asbestos Inspector – conducted asbestos survey per National Emission Standards for Hazardous Air Pollutants requirements on numerous buildings, including visual surveys of potential asbestos containing materials, sampling, notation of condition and quantity estimation.
- Asbestos surveys, Sears, JC Penney, CVS, Eckard, K-Mart, Residential Homes, AEP Power Plants, City of Pittsburgh School District, Uniontown School District, UPMC, OVMC, US Steel Irvine Works, Clarition Mill, Brucemansfield Power Plant, Masontown Power Plant, Orion Power Plants and Rouseville Oil Refinery.

ADDITIONAL TRAINING/CERTIFICATIONS AND LICENSES

- Pennsylvania Asbestos Management Planner
- Pennsylvania Asbestos Building Inspector
- Pennsylvania Asbestos Contractor/Supervisor
- Ohio Asbestos Hazard Abatement Specialist
- Ohio Asbestos Hazard Evaluation Specialist
- West Virginia Asbestos Building Inspector
- West Virginia Asbestos Clearance Air Monitor
- Niosh 7400 Method 782 Certification
- OSHA 40-Hour HAZWOPER, (and current with annual refreshers).
- OSHA 1ST Responder Certification
- Excavation Safety Training
- NITON XRF 309 Spectrum Analyzer Certification



SPECIAL QUALIFICATIONS . . .

- Ü Assoc. Degree, Triangle Tech, Pittsburgh, PA, 1988
- Ü Over 7 years experience as asbestos inspector and project manager combined with AutoCAD expertise
- Ü Field supervision of numerous underground storage tank removals in various states
- Ü Numerous asbestos inspections for clients in various states
- Ü Numerous Phase I Environmental Site Assessments conducted per American Society of Testing Materials standards for a wide variety of clients (multi-state)

PROJECT EXPERIENCE

Multiple Phase I Environmental Site Assessments, Various Clients and States - Environmental Scientist. Projects consisted of site investigations conducted in accordance with the standards of the American Society of Testing Materials and included research of site geology and hydrogeology; federal government, state, and local database search; municipal records search for chain of title documents and historical land use; and visual inspections of the site and surrounding areas for K Mart, Sears, Taco Bell, Auto Zone, and Aldi, in Pennsylvania, West Virginia, Virginia, Ohio, New York, and Illinois

Numerous Asbestos Inspections and Abatement Management, National Commercial Chain, OH, PA, IL, IN, NJ, NY,

WV, HI – Project Manager/Asbestos Inspector. Coordinated and conducted over 60 asbestos surveys per National Emission Standards for Hazardous Air Pollutant requirements on numerous buildings, including visual surveys of suspect asbestos containing materials, sampling, notation of material condition and quantity of material. Prepared detailed reports used in subsequent abatement management. Activities conducted on an expedited schedule to meet the building demolition and property redevelopment schedules.

Asbestos Surveys, Asbestos Abatement and Facility Demolition, Former Petroleum Refinery, Pennsylvania - Project Manager. Managed the abatement of all asbestos-containing materials from the entire refinery. Materials abated included pipe insulation, tank insulation, steam line gaskets, floor tile and associated mastics, Transite and Galbestos siding. Additionally, coordinated the demolition activities of the refinery concurrent with the asbestos abatement.

Numerous Asbestos Inspections, Railway Industry, Multiple Pennsylvania and Ohio Locations - Project Manager/Asbestos Inspector. Coordinated and conducted asbestos surveys per National Emission Standards for Hazardous Air Pollutant requirements on numerous buildings, including visual surveys of suspect asbestos containing materials, sampling, notation of material condition and quantity of material.

Numerous Asbestos Inspections, National Bank, Multiple Ohio Locations - Asbestos Inspector. Conducted over 54 asbestos surveys per National Emission Standards for Hazardous Air Pollutant requirements on numerous buildings, including visual surveys of suspect asbestos containing materials, sampling, notation of material condition and quantity of material.

Recovery System Installation/Maintenance and Groundwater Sampling, Major Oil Company, Pennsylvania - Environmental Scientist. Monthly groundwater compliance sampling; contractor oversight during belt skimmer system installation, testing, and start-up; belt system timer adjustments to improve product recovery and prolong skimmer motor life; electrical system



maintenance and repair (breakers, fuses, trouble shooting); system status documentation; and bi-weekly separate-phase well gauging and product recovery.

Groundwater Sampling Program, Former Refinery, Reno, Pennsylvania - Environmental Scientist. Monthly groundwater sampling and product recovery using whale pump and manual bailing of 23 wells.

Numerous Asbestos Air Quality Monitoring Projects, National Retail Client, Multiple Ohio and Pennsylvania Locations - Asbestos Inspector. Conducted subcontractor oversight during abatement activities and collected air samples for PCM analysis.

Groundwater Sampling, Municipal Landfills Pennsylvania - Senior Environmental Scientist. Quarterly groundwater compliance sampling of thirty-two monitoring wells and twenty surface water points.

Multiple Underground Storage Tank Removals, Various Clients and States - Environmental Scientist. Provided full time removal/environmental oversight of many underground storage tank removals and proper environmental sampling for clients including Ryder Truck Rental, Jiffy Lube, Unocal, Business Records Management, and Tire America in Pennsylvania and Ohio. Many projects included over-excavating and proper management of impacted soil.

Quarterly Sampling, Trucking Company, New Stanton, Pennsylvania - Environmental Scientist. Performed groundwater gauging and compliance sampling of twelve groundwater monitoring wells, provided activated carbon treatment of the purge water during each sampling event.

Numerous Asbestos Inspections, National Retail Client, Various States including Pennsylvania, Ohio, New Jersey and Hawaii - Asbestos Inspector. Inspected and sampled suspect asbestos containing materials for potential remodeling/demolition in conjunction with Phase I Environmental Site Assessments.

Groundwater Sampling, Retail Facility, Ohio - Environmental Scientist. Quarterly groundwater sampling of seven monitoring wells for remedial action plan implementation.

Free Product Removal, Truck Rental Terminal, New Stanton, Pennsylvania - Environmental Scientist. Performed quarterly removal of product collected by PetroTraps® in compliance with the remedial action plan for this site.

Product Recovery/Well Maintenance, Truck Rental Facility, West Virginia - Environmental Scientist. Provided PetroTrap® installation and adjustment; well gauging and maintenance; and monthly regulatory compliance sampling.

Remediation System Design Support, Gasoline Truck Station, North East, Pennsylvania - Design Draftsman. Prepared and provided quality assurance review of AutoCAD drawings per engineering specifications for installation of a groundwater remediation and product recovery system. System specifications included trenching, piping runs, system equipment and maintenance shed layout, downhole product recovery equipment, equipment winterizing, and facility layout plans. Coordinated with the facility manager for equipment placement.



SPECIAL QUALIFICATIONS . . .

- ü B.S., Geology, 1999
- ü Over four years experience in environmental consulting fieldwork and field supervision, predominantly at refinery sites performing remediation system operation and maintenance and environmental sampling
- ü Licensed Pennsylvania Asbestos Inspector and Asbestos Management Planner
- ü Mechanically inclined with superior problem solving skills
- ü Team player that works well with clients, coworkers, and facility personnel. Reputation for being able to fix almost anything
- ü Expert computer skills

PROJECT EXPERIENCE

- **Environmental Technician, Groundwater/Product Recovery System Operation and Maintenance, Former Refinery Site, Emlenton, Pennsylvania.** Perform O&M of a groundwater/product recovery system designed to recover LNAPL identified at a former refinery site currently owned by a third party. Collect biweekly samples from the discharge to the POTW from the treatment system per permit requirements to confirm treatment system is operating properly; no violations to date. Perform monthly gauging and manual product recovery in wells not designated for pumping. Provide data tables for annual reporting per DEP requirement.
- **Environmental Technician, Operation and Maintenance of LNAPL Migration Control System, Two Former Refinery Sites, Rouseville, Pennsylvania.** Perform

O&M on a recovery system designed to prevent LNAPL migration into adjacent creeks. Installed new groundwater treatment system equipment. Provide ongoing maintenance for oil/water separators, product storage tanks, groundwater aeration units, bag filters, iron removal units, granular activated carbon (liquid and vapor phase), air compressors, and associated pumps, blowers, etc. Implemented system upgrades including retrofitting recovery well road boxes (eliminated permit-required confined-space entry) and installing pneumatic total fluids recovery pumps (require less maintenance; are more reliable in groundwater containing elevated iron concentrations). Monitor the adjacent creeks for seeps/sheens during routine inspections; deploy product absorbing booms/pads, as necessary. Perform gauging and manual product recovery at non-automated wells. Write bi-weekly update reports on O&M progress. Write the quarterly report required for submittal to DEP and USEPA. One of the properties is currently owned by a third party, who operated the facility during the first few years of system O&M; that facility is currently undergoing decommissioning and demolition. Effective communication and good working relationships with the current property owner are key to the success of this project.

- **Environmental Technician, Groundwater/Product Recovery System Operation and Maintenance, Former Refinery Site, Smethport, Pennsylvania.** Perform O&M of a groundwater/product recovery system recovering LNAPL identified at a former refinery site currently owned by a third party. Prepare biweekly update reports and forward to the client and the consultant responsible for regulatory reporting. Good communication and working relationships with the client and other consultant have been instrumental in the successful implementation of this shared-responsibility project.

ADDITIONAL TRAINING/CERTIFICATIONS AND LICENSES

- OSHA 40-Hour HAZWOPER, (and current with annual refreshers).
- 8-Hour OSHA Site Supervisor.
- Trenching and Excavation Safety, Confined Space Entry, Fork Lift Operator, Refinery Safety.
- Licensed Pennsylvania Asbestos Inspector and Asbestos Management Planner.



SPECIAL QUALIFICATIONS . . .

- B.S., Microbiology, Pennsylvania State University, 1985
- Asbestos project management and air monitoring experience
- Experienced in industrial hygiene consulting
- Experienced in indoor air quality consulting
- Asbestos inspector
- Six years experience as assistant laboratory director
- Asbestos in air by Phase Contrast Microscopy (PCM)
- Metals by Atomic Absorption Spectrophotocopy (AAS)
- *Significant experience performing historical data collection and site inspections for Phase I Environmental Site Assessments per American Society for Testing and Materials recommended practices*

PROJECT EXPERIENCE

- Asbestos project setup, management and air monitoring in various public schools in New York state and Pennsylvania.
- Primary industrial hygiene consultant at several southwestern New York and north central Pennsylvania industries and schools.

ASBESTOS SURVEYS

- Six years of experience performing asbestos surveys in New York and Pennsylvania industry, schools, and other establishments.
- Inspections following New York State Department of Transportation Code Rule 56, Environmental Protection Agency Asbestos Hazard Emergency Response Act and National Emission Standards for Hazardous Air Pollutants.

- Sears asbestos surveys in New York, including tool territories, SLS and PSC's. Conducted National Emission Standards for Hazardous Air Pollutants asbestos surveys on interior building materials.

ADDITIONAL TRAINING/CERTIFICATIONS AND LICENSES

- New York State Asbestos Building Inspector, 1995-2000.
- New York State Asbestos Project Air Sampling Technician, 1995-2001.
- New York State Asbestos Project Monitor, 1995-2001.
- Pennsylvania Asbestos Management Planner, 1998-2001.
- Pennsylvania Asbestos Inspector, 1995-1998.
- OSHA 40-Hour HAZWOPER, (and current with annual refreshers).



SPECIAL QUALIFICATIONS

- Ü B.S. Environmental Science with Geology minor, Allegheny College, Meadville, PA, 1990
- Ü C.E.U. The Princeton Course: Groundwater Pollution and Hydrology
- Ü C.E.U. Analysis and Design of Aquifer Tests, NWWA
- Ü C.E.U. Planning and Writing Hydrogeological Reports, National Water Well Association
- Ü Author of The Relationship Between Drainage Basin Geology/Physio-graphy and Stream Hydrology of Cussewago Creek, Undergraduate Thesis, Allegheny College, Meadville, Pennsylvania, May 14, 1990
- Ü Co-Author of "Brownfields Update: A Summary of Environmental Protection Agency's Brownfields Economic Redevelopment Initiative, Commentary, Remediation, Volume 10, No. 4, Autumn 2000, Wiley Publishing
- Ü Over 14 years of experience in the environmental field
- Ü Council Member, Delmont Borough, Westmoreland County, Pennsylvania

PROJECT EXPERIENCE

Environmental Management, Various Clients and Locations - Project Manager. Mr. Oberdorf has over fourteen years of progressive experience in environmental consulting for private and public sector clients. He has environmental management experience and the technical competencies required for developing effective and efficient project strategies to meet his clients environmental and business objectives. Mr. Oberdorf's environmental management perspective has been developed from implementing numerous voluntary state-lead, Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act, and due diligence projects throughout the United States. He is experienced in client and agency communication, site characterization and investigation, Pennsylvania Act 2, and Phase I/II Environmental Site Assessments. He has practical experience in hydrogeological mapping, analytical computer modeling, aquifer testing, monitoring well installation, and environmental media sampling techniques including direct push technology and field screening techniques using immunoassay test kits.

Pennsylvania Land Recycling Program (Act 2), Various Clients and Locations - Project Manager. Mr. Oberdorf has served as the project manager and task manager for numerous Act 2 projects at industrial and commercial facilities throughout the State. These Act 2

projects have involved various components of the program including: site characterization of groundwater, surface water, soil, sediment, and indoor air; Special Industrial Area cleanups; groundwater to surface water discharge analysis; implementation of engineering and institutional controls; nonuse aquifer demonstrations; attainment demonstrations and Release of Liabilities for background, statewide, and site-specific health standards; and interaction with other federal regulatory programs such as Resource Conservation and Recovery Act Corrective Action.

Environmental Due Diligence, Various Clients and Locations - Project Manager. Mr. Oberdorf has managed and conducted numerous Phase I Environmental Site Assessments (ESAs) in accordance with ASTM 1527-00 at industrial and commercial facilities to support merger and acquisitions. Based on the results of the Phase I ESAs, Mr. Oberdorf has proposed, scoped, and implemented Phase II ESAs to document potential liabilities.

Site Characterizations and Investigations, Various Clients and Locations - Project Manager. Mr. Oberdorf has experience in the development and implementation of site characterization programs to support remedial decisions and risk assessments at Resource Conservation and Recovery Act, Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability



Act, and state-lead sites. He has managed numerous small and large site characterization programs using both conventional and accelerated field sampling techniques and has practical experience in aquifer testing and groundwater extraction. This experience has been gained primarily through the implementation of projects at former and active wood treating facilities, coal tar manufacturing facilities, chemical manufacturing facilities, and light- to medium-sized manufacturing facilities. Mr. Oberdorf has performed site characterization and investigations at properties containing Light Nonaqueous Phase Liquids and Dense Nonaqueous Phase Liquids. Agency negotiations and discussions have involved the approval of site work plans, quality assurance project plans, health and safety plans, investigation reports, and general project status reporting.

Conceptual Site Model Development, Site Characterization and Interim Corrective Actions, Inactive Refinery, Pennsylvania - Project Manager. Managing the site characterization activities at a refinery property per Chapter 245 and 250 regulations. Based on the results of a limited investigation, researched and reviewed available documentation on environmental conditions at the refinery site and developed a work plan to investigate site-wide environmental concerns in accordance with Act 2 requirements. Directed implementation of the remedial investigation. Using pathway elimination, groundwater fate-and-transport modeling (including PENTOXSD), and statistical calculations to establish site-specific standards for soil and groundwater impacts, as applicable.

Phase II Site Characterization Under Act 2 at a Light Industrial Property - Project Manager/Geoscientist. Responsible for coordinating the implementation of a surface and subsurface soil sampling program at select areas of concern and the collection of groundwater samples from monitoring wells and geoprobe sampling locations. Prepared a Phase II Report for submittal to Department of Environmental Protection requesting that site soils and groundwater be remediated to Statewide Health Standards under Act 2.

Phase II Site Characterization Under Act 2 at a Former Wood Treating Site - Project Manager/Geoscientist. The project was completed at the time under the Department of Environmental Protection Interim Environmental Investigation Guidelines, which are now included in the Technical Guidance Manual for Act 2. The project included the development of a Phase II Site Characterization Work Plan, implementation of the fieldwork, and the final Site Characterization Report preparation and submittal.

Remedial Investigation Under Act 2 Active Refinery, Pennsylvania - Project Consultant. Served as project geoscientist for multiple phases of the Remedial Investigation for a large project in Butler County involving over 10 Resource Conservation and Recovery Act (RCRA) Solid Waste Management Units (SWMUs). Although the site was a RCRA facility, the various SWMUs were being closed using the Act 2 program. The Department of Environmental Protection was serving as the lead agency for the project. Specific tasks completed incorporated all of the various components of the Act 2 program including the evaluation of diffuse groundwater discharges to surface water, plume migrations to a municipal well, and nonuse aquifer settings. Also provide technical litigation support on this project related to regional groundwater contamination monitoring.

Remedial Investigation Under Act 2 at Former Industrial Facility, Pennsylvania - Project Consultant. Served as geoscientist for a Remedial Investigation to support a pathway elimination demonstration under the Site-Specific Standards of Act 2. Project included the use of institutional and engineering controls and post-remediation monitoring to obtain a Release of Liability.



SPECIAL QUALIFICATIONS . . .

- Ü B.S., Mechanical Engineering, Pennsylvania State University, 1976.
- Ü Over 24 years of industrial and environmental consulting experience with the management and execution of environmental projects including: remediation; environmental site assessments; decontamination; demolition; investigations; hazardous waste management; underground storage tank closures and regulatory compliance issues.
- Ü Experience in providing effective business solutions to meet clients' environmental needs and reduce costs.
- Ü Successful negotiator with regulatory agencies to obtain investigation and remediation work plan approvals and no further action status for sites.
- Ü Successful implementation of site remediation work plans that enabled property owners to obtain the no further action or release of liability status.

PROJECT EXPERIENCE

Environmental Due Diligence, various clients, Pennsylvania, Ohio, West Virginia, New Jersey, Maryland and New York - Project Director. Provided senior technical review and final report Quality Assurance for Phase I Environmental Site Assessments in accordance with American Society for Testing and Materials 1527-00. Responsible for identifying recognized environmental conditions at commercial, retail and industrial sites to support redevelopment activities.

Environmental Site Assessments, various clients, Pennsylvania, Ohio, West Virginia, New Jersey, Maryland and New York - Project Director. Provided project direction, senior technical review and final report Quality Assurance for Phase II Environmental Site Assessments (ESAs) to further evaluate horizontal and vertical extent of impact at commercial, retail and industrial sites. Remedial action plans would then be developed and implemented following the Phase II ESA findings.

Remedial Actions, Pennsylvania, Ohio, West Virginia, New Jersey and New York - Project Director. Developed work plans, obtained agency approvals, and successfully implemented plans to achieve closure. Remedial actions included underground storage tank removal, soil removal and design/installation of remediation systems (air sparge/vapor extraction, total fluids removal). After demonstration of attainment of standard, no further actions were granted by the governing states.

Remedial Action Planning and Implementation, Vehicle Maintenance Facility, Pittsburgh, Pennsylvania – Project Manager. Prepared a remedial action plan and provided oversight for installation of a SVE and air sparging system coupled with bio-venting for this former vehicle maintenance facility. The system consisted of a series of air sparge points with provisions for nutrient additions, soil vapor recovery points, and a treatment system to remediate soil and groundwater impacted with gasoline and diesel.

Remediation Design and Implementation, Wood Treating Facility, Kentucky – Project Manager. Project Manager for the final design, equipment procurement, installation and startup



of a groundwater gradient control and dense nonaqueous phase liquids (DNAPL) collection system in Kentucky. System operational goals to control off-site migration and to collect DNAPL. System is currently operational and performing as expected. Future plans include expanding the system to other areas of the facility.

Crude Oil Tank Bottom Pit Closures, Pennzoil Products Company, West Virginia – Project Manager. Conceptualized and implemented a phased-approach closure plan for three crude oil tank bottom pits. The plan activities included a health and safety plan, site characterization, health and environmental risk assessment, remediation work plan, remediation bench scale study, and closure and site restoration plan. The crude oil tank bottom material was amended in place with agricultural lime dust, covered with clay and topsoil. The site was then restored to background-like conditions. The unusual project conditions included: the project setting (the pits were located in a municipal park and bordered by residential homes, a technical school and a backup water reservoir), the potential receptors (the park users, residents, etc.) and the media. This business solution saved the client hundreds of thousands of dollars, created positive PR for the client with the community and the regulatory agency, and enhanced the environment for the future plans of the park.

Remediation Design and Implementation, Various retail sites, Ohio, Pennsylvania, and New York – Project Manager. Project Manager for excavation work plans and post excavation sampling programs, subcontractor (excavation and disposal) procurement, agency contact, site controls and restoration, final report submittals that generated no further actions for property owners.

Industry Spill Prevention and Response Planning, Pennzoil Products Company, West Virginia – Project Manager. Project team manager for ONE PLAN, a multi-site/multi-plan program that combines the contingency planning under various regulations into one document, the ONE PLAN. It includes spill prevention and response as required under Oil Pollution Act-90, Spill Prevention, Control and Countermeasure, Resource Conservation and Recovery Act, Occupational Safety and Health Administration, Department of Transportation, and Emergency Planning and Community Right-to-Know Act, as well as other state and local requirements as necessary.

UST Removal and Remediation, Petroleum Industry, Pennsylvania – Project Manager. Managed the remediation activities at a gasoline-impacted site. Coordinated underground storage tank removal activities, subsurface investigations, remedial alternatives, design, installation and operation. The results of the site operations indicated that the remedial system performed as designed. Following demonstration of attainment goals (SHWS), a release of liability was obtained.



SPECIAL QUALIFICATIONS . . .

- Ü B.S., Geology, Clarion University of Pennsylvania, 1991.
- Ü Experienced and licensed asbestos inspector, Ohio and Pennsylvania.
- Ü Eleven years of environmental experience.
- Ü Six years of project management experience including site characterizations, compliance monitoring, remediation, and environmental construction.
- Ü Five years of field management experience in remediation system installations, operation and maintenance, including pump-and-treat, air sparge, soil vapor extraction, dual-phase vacuum extraction, enhanced natural attenuation, manual product recovery, and passive product recovery.
- Ü Environmental construction experience in secondary containment, stormwater piping, and aboveground storage tank upgrades.
- Ü Extensive drilling and monitoring well installation experience in OH, PA, IL, MI, MA, WV, VA, NC, NY, NJ, and MD.

PROJECT EXPERIENCE

Multiple Phase I Environmental Site Assessments, Various Clients in Pennsylvania, West Virginia, New York, Connecticut, Rhode Island, North Carolina, Virginia, Maryland, and Ohio - Project Manager. Managed site investigations conducted in accordance with American Society of Testing Materials standards and included research of site geology and hydrogeology; federal government, state, and local database search; municipal records search for chain of title documents and historical land use; and visual inspections of the site and surrounding areas.

Asbestos Survey, Major Retail Chain, Maryland - Asbestos Inspector. Conducted a National Emission Standards for Hazardous Air Pollutants asbestos survey on a building scheduled for demolition.

Underground Storage Tank Closure and Remediation, National Trucking Company, Cheektowaga, New York - Project Manager/Site Geologist. Coordinated and supervised removal of three diesel fuel 12,000-gallon underground storage tanks (USTs), one 12,000-gallon

gasoline UST, and one 1,000-gallon oil/water separator per New York State Department of Environmental Conservation (NYSDEC)– Region 9 guidelines. Based on previous site characterization data and the pending sale of the 10-acre property, an extensive impacted soil excavation, transport, and treatment plan was implemented. The plan included dewatering of the excavations, demolition of the existing fuel islands, and excavation of approximately 10,000 tons petroleum impacted soil. Before work activities, successful negotiations with the Buffalo Sewer Authority regarding discharge of removed groundwater to the local sewer authority proved to be a substantial cost saving to the client. Although NYSDEC required a NYSDEC-approved landfill for the impacted soil, successful negotiations with NYSDEC regarding the use of an out-of-state, previously unapproved treatment facility yielded a substantial cost savings and protection of future liability for the client. Work activities were conducted 24-hours per day to meet the real estate developers deadline and included daily visits by NYSDEC personnel. During this time further successful negotiations were conducted including schedules, sampling locations and intervals, and obtaining additional site data.



Light Nonaqueous Phase Liquids (LNAPL) Migration Control System Operation and Maintenance, Two Former Refinery Sites, Rouseville, Pennsylvania - Project Manager.

Coordinated full-time field staff in operating and maintaining LNAPL migration control systems via pneumatic pumps installed in groundwater/product recovery wells and trenches. Treatment system equipment included oil/water separators, groundwater aeration units, product storage tanks, bag filters, iron removal units, granular activated carbon (liquid and vapor phase), PLC unit, air compressor, and associated pumps, blowers, etc. Site activities also include manual LNAPL recovery, low-flow groundwater sampling via peristaltic pumps, and seep/sheen control to adjacent creek and streams using product absorbent booms and pads. Served as technical resource to field staff during site activities. Maintained stringent manufacturers maintenance schedules of system components to maintain equipment warranties. Procured parts, supplies, and subcontractor services for carbon change-outs, vac-truck cleaning of oil/water separators and iron units, and other services, as needed. Coordinated transport and treatment/recycling of recovered LNAPL, spent granular activated carbon, sediments/sludges, and spent absorbents and filters.

Spill Prevention Control and Countermeasure Plan (SPCC), Major Truck Rental Company, West Virginia and New York - Field Auditor. Conducted field audit of existing site conditions for preparation of SPCC plans.

Secondary Containment Construction, Air Force Base, Washington D.C. - Project Manager/Field Supervisor. Managed and coordinated secondary containment construction for jet fuel storage including concrete removal and installation, stormwater valves and piping installation, and aboveground storage tank upgrades in areas of high security.

Environmental Spill Clean Up, Insurance Company, Ohio - Field Supervisor. Provided field supervision of soil, water, and wildlife clean up required after a petroleum release from residential heating oil tank.

Petroleum Spill Clean Up, Fuel Supply Location, Verona, New York - Project Manager. Managed and coordinated petroleum clean up and closure at a Defense Fuel Supply Point. Managed spill clean-up and closure activities including waste disposal, soil sampling, and report preparation and submittal in New York State Department of Environmental Conservation Region 6.

Underground Storage Tank Investigation/Residential Well Treatment, Petroleum Company, Pennsylvania - Field Supervisor. Provided oversight for the installation of 18 activated carbon water treatment systems in private homes and businesses with drinking water wells impacted by an underground storage tank release. Provided interaction between homeowners, sub-contractors and project managers. Performed monthly groundwater and treatment systems monitoring. Also, provided subcontractor oversight during soil sampling and monitoring well installation at the local contamination source area (service station).

Petroleum Remediation System Operation and Maintenance, Truck Stop, Strattanville, Pennsylvania - Project Manager. Coordinated bi-monthly operation and maintenance of a dual-phase vacuum extraction system, manual product recovery activities, monthly National Pollutant Discharge Elimination System discharge monitoring, quarterly groundwater monitoring, and associated reporting to the Pennsylvania Department of Environmental Protection (DEP). The groundwater treatment system included a liquid ring pump, transfer pump, timers and liquid and vapor-phase carbon. Coordinated transport and treatment of spent vapor/liquid-phases of carbon, and associated spent absorbents and filters. Coordinated activities with current site owners/operators. **Site was recently approved for release of liability (closure) through DEP acceptance of the Remedial Action Completion Report.**



SPECIAL QUALIFICATIONS . . .

- Ü B.S., Geology, Indiana University of Pennsylvania, 1987.
- Ü M.S., Geology, West Virginia University, 1991.
- Ü Licensed Professional Geologist, Pennsylvania and Indiana
- Ü Over 13 years of combined project management and hydrogeologist professional experience.
- Ü Project manager for numerous due diligence projects including Phase I Environmental Site Assessments (ESAs), Phase II ESAs, underground storage tank removals, geotechnical investigations, asbestos inspections and abatement.
- Ü Project manager for numerous petroleum contaminated sites that involved remediation and regulatory compliance report submittals to applicable state agencies.

PROJECT EXPERIENCE**Phase I Environmental Site Assessments/Compliance Audits, Industrial Facilities, Pennsylvania – Project Manager.**

Managed and conducted numerous Phase I Environmental Site Assessments/compliance audits including an investment casting facility, steel fabrication business, plastics injection molding facility, glass manufacturing facilities, and several hospitals.

Phase I and II Environmental Site Assessments and Geotechnical Investigations, National Drug Store Chain with Facilities in Tennessee, Kentucky, West Virginia, and Pennsylvania - Project Manager.

Completed above-referenced investigations on new locations planned for construction based upon client specifications. Provided asbestos inspections and remedial cost estimates to the client so that potential environmental costs during land development

could be evaluated. These estimates enabled the client to complete a more thorough evaluation of the feasibility for developing each site.

Geotechnical Investigations, Limited Environmental Assessment Investigations and Construction Materials Testing, National Restaurant Chain with Facilities in Southwestern Pennsylvania - Project Manager. Completed above referenced investigations on existing facilities planned for remodel or new locations planned for construction based upon client specifications. Provided asbestos abatement and construction materials testing during related activities. Provided site specific recommendations to client based upon clients perspective and financial obligation to the site (leased or own). *Received client service award for excellent project management and client interaction.*

Due Diligence for Prospective Facility Acquisitions, Manufacturing Company, Multiple Locations Throughout the U.S. – Project Manager. Conducted interoffice environmental evaluation of over 50 bottled water distribution centers to provide site-specific recommendations regarding environmental liability prior to acquisition. Reviewed historical environmental information for oil recycling facility located in Chicago, Illinois that was under consideration for acquisition and developed the Phase II Environmental Site Assessment work scope to further evaluate potential environmental liability associated with the site.



Due Diligence for Company-Owned Real Estate, Steel Manufacturer, Pittsburgh, Pennsylvania – Project Manager. Performed inspections on company-owned, leased parcels to determine if tenants were causing any degradation to the environment and provided recommendations for additional Phase II Environmental Site Assessment work as well as providing suggestions regarding proper waste storage and handling.

Remedial Action Completion Report and Groundwater Remediation, Auto/Truck Plaza, Pennsylvania - Project Geologist. Completed a Remedial Action Completion Report utilizing the Pennsylvania Act 2 legislation. The client was able to obtain closure under the Statewide Health Standard. Remedial system design included the installation of soil vapor extraction and groundwater extraction wells. The client obtained a release of liability for the former petroleum release and decommissioned the remedial system.

Remedial Action Plan, Contaminated Petroleum Transfer Station, Pennsylvania - Project Manager. Completed a remedial action plan for the site, which had groundwater contaminated with volatile organic compounds. The remedial action included over excavation of source area soils and placement of oxygen release compounds combined with subsequent quarterly sampling monitoring for point of compliance wells.

Remedial Investigation Reporting, Former Petroleum Refinery, Pennsylvania - Project Manager. Completed a Remedial Investigation Report for the site, which has groundwater and soil contaminated with volatile organic compounds and semi-volatile organic compounds. Successfully obtained a Non-Use Aquifer status for the site through the Department of Environmental Protection so that less stringent regulatory levels could be used and thereby reducing the area to be actively remediated. The in-place remedial system includes a pump and treat system oriented along the site's point of compliance combined with subsequent quarterly sampling monitoring for point of compliance wells.

Environmental Investigations Including Soil and Groundwater Sampling, Aircraft Engine Facility, Petropolis, Brazil – Senior Geologist. Conducted environmental investigation including soil and groundwater sampling, aquifer pump tests, and recovery well installation. Information was used to design a groundwater remediation system that included air stripping. Coordinated equipment shipment, and field activities with Brazilian facility personnel, subcontractors and laboratories.

Regulatory Compliance, Utility Company, Southwestern Pennsylvania – Project Manager. Managed landfill inspections, groundwater monitoring programs, and National Pollutant Discharge Elimination System permits for closed, utility owned, ash-disposal sites in southwestern Pennsylvania. Completed monthly discharge monitoring reports and landfill inspection reports that included recommendations regarding maintenance of the landfill cap, storm water management, and landfill security. Prepared quarterly/annual water quality analysis reports (DEP Form 14R) for these facilities as required by the Pennsylvania Department of Environmental Protection, Bureau of Land Recycling and Waste Management for existing residual waste landfills and disposal impoundments.



CERTIFICATIONS

WOMEN'S BUSINESS ENTERPRISE (WBE)

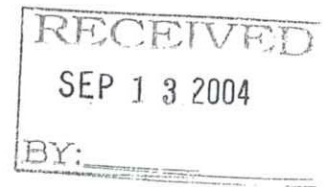
**U.S. SMALL BUSINESS ADMINISTRATION 8(A)
BUSINESS DEVELOPMENT PROGRAM**

SBA SMALL DISADVANTAGED BUSINESS





U.S. Small Business Administration
Washington, D.C. 20416



SEP 10 2004

Peggy L. Carpenter, President
CP Environmental Group, Inc.
339 Haymaker Road, Suite 1101
Monroeville, PA 15146

Dear Ms. Carpenter:

Congratulations! Your firm has been certified as a Participant in the U.S. Small Business Administration's (SBA) 8(a) BD program. Your nine (9) year program term begins on the date of this letter.

Additionally, your firm has been certified as a Small Disadvantaged Business (SDB) in the Federal Government's SDB program. Your term of participation in the SDB program is concurrent with your 8(a) BD certification.

During participation in the 8(a) program, you will receive business development assistance from an assigned Business Opportunity Specialist in the Pittsburgh District Office located at 1000 Liberty Avenue, Room 1128, Pittsburgh, Pennsylvania 15222-4004. The phone number is 412/395-6560. The District office will also be able to provide you with information on the SDB program and its benefits.

Your firm will become eligible to receive 8(a) contracts after you submit a business plan using SBA Form 1010C and receive SBA's approval of the plan. We are sending a copy of this certification letter to the SBA Pittsburgh District Office. That office will send you the business plan form.

SBA requires that the President or Chief Executive Officer sign a Participation Agreement to show that he or she understands the conditions of 8(a) program participation. Please read the Agreement carefully, sign and date one copy and return it to the SBA Pittsburgh District Office at the address shown in the third paragraph above. The second copy is for you.

Even though your firm's approved North American Industry Classification System (NAICS) Code is 541620; your firm may be awarded contracts under other NAICS Codes, as long as the firm is qualified to perform. In this regard, please note that contracts awarded under 8(a) BD program authority generally result from the self-marketing efforts of the 8(a) firm. While your firm's acceptance into the 8(a) BD program is not a guarantee of contract support, SBA will make every effort to provide you with assistance in your marketing efforts.

If you have not already done so, we strongly suggest that you acquire access to e-mail to enhance your communication abilities with public and private sector buyers. Also, you should consider setting up a merchant account with a credit card company which will give you the ability to accept credit card orders for your goods and services from over 1,000 Federal buying offices. Finally, please contact your local SBA District Office to update your enrollment in PRO-Net, an SBA online procurement listing of small businesses utilized by public and private sector buyers.

We welcome you as an 8(a) program participant and look forward to working with you.

Sincerely,

Al Stubblefield
Acting Associate Administrator
Office of Business Development

Enclosures

Membership Certificate

This is to certify that

CP Environmental Group, Inc.

Standard Industrial Classification/NAICS code 8748/541620, 562910

has successfully met the eligibility criteria for certification as a bona fide

Women's Business Enterprise

by

Women's Business Development Center

a partner in the network of certifying organizations

Women's Business Enterprise National Council

and that applies standards and procedures adopted by the WBENC board of directors.

8/18/2004

Date Issued

8/17/2005

Expiration Date



Geni Swigh

President, WBDC

WBDCPA-0327

Certificate No.

INSURANCE CERTIFICATE



ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
08/10/2004

PRODUCER Marsh Advantage America Six PPG Place, Suite 300 Pittsburgh, PA 15222-5499 (412) 552-5000		THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
INSURED CP Environmental Group, Inc. 339 Haymaker Road Monroeville, PA 15146 412-856-8700		INSURERS AFFORDING COVERAGE	NAIC#
		INSURER A: American International Specialty Lines Insurance Co.	
		INSURER B: Hartford Casualty Ins. Co.	
		INSURER C: Hartford Ins. Co. of the Midwest	
		INSURER D:	
		INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A		GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMSMADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Pollution Incl <input checked="" type="checkbox"/> Ded: \$2,500 GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC	PROP 1277236	05/30/04	05/30/05	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 25,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
B		AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	40UECUM4864	5/30/04	5/30/05	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN EA ACC \$ AUTO ONLY: AGG \$
A		EXCESS/UMBRELLA LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMSMADE <input type="checkbox"/> DEDUCTIBLE <input type="checkbox"/> RETENTION \$	PROU 0791115	05/30/04	05/30/05	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$ \$
C		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	40WECPA8184	5/30/04	5/30/05	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A		OTHER Professional Liability	Claims Made PROP 1277236	05/30/04	05/30/05	\$1M Occ/\$2M Agg \$20,000 Deductible Retro Date 6-1-1991

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

CERTIFICATE HOLDER

Insurance Record Only

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Bernard Contino