
KEITH T. MATTESON, PE

Education

M.S. - Civil and Geotechnical Engineering/Groundwater Hydrology, Auburn University, 1987
B.C.E. - Civil Engineering, Auburn University, 1983

Professional Licenses

Registered Professional Engineer; VA (1999), NC (1999), SC (1992)

Professional Experience

Mr. Matteson has worked exclusively in the civil/environmental engineering field since the mid 1980s. He has conducted, or has managed numerous environmental, landfill, groundwater, water resources and geotechnical engineering projects. He has managed remedial investigations/feasibility studies, and as conducted potential responsible party (PRP) oversight at National Priority List sites for the U.S. Environmental Protection Agency. In addition, Mr. Matteson has performed storage tank projects funded by the Virginia Petroleum Storage Tank Fund (VPSTF), as well as produced Spill Prevention, Control and Countermeasure (SPCC) Plans and Oil Discharge Contingency (ODC) Plans. Other environmental projects include soil, groundwater and surface water characterizations, Brownfields and landfill reuse. His landfill gas experience includes active and passive extraction design and installation, migration control and landfill gas to energy feasibility studies and due diligence. His solid waste experience includes Subtitle D landfill permitting, design, construction and certification, closure, as well as landfill gas control and environmental compliance program management. His groundwater engineering experience includes monitoring and contamination assessments at solid waste landfills and National Priority List (Superfund) sites. His geotechnical experience includes subsurface investigations as well as consolidation and slope stability analyses. Examples of his project experience include:

Environmental Services

City of Norfolk General Environmental Services Contract. Contract Manager responsible for allocation of resources, as well as financial and technical performance of projects performed for the City under the Contract. Projects include post-closure care and environmental monitoring at the City's closed Campostella Landfill. Also various other tasks including addressing leaking underground storage tanks and performing groundwater elevation studies in the vicinity of City utilities.

Norfolk Redevelopment and Housing Authority (NRHA) General Environmental Services Contract. Contract Manager responsible for allocation of resources, as well as financial and technical performance of projects performed for NRHA under the Contract. Projects include Phase I and II Environmental Site Assessments at various sites within the City of Norfolk. Also, assistance with entering and completing the Virginia Voluntary Remediation process at the NRHA-owned Brewery Site.

Swanson Homes Carbon Monoxide Monitoring, Portsmouth Redevelopment and Housing Authority. Project Manager responsible for monitoring and reporting of carbon monoxide levels in apartments at Swanson Homes. Monitoring results were used to determine if units are habitable and if appliances should be replaced.

Hall Residence Site Remediation, Virginia Beach, VA. Project Manager responsible for remediation of heating oil contaminated groundwater and soil caused by leaking underground storage tank. Remediation was accomplished by excavating contaminated soil from under basement slab. Free product was removed from ponded water within excavation and treatment of residual petroleum before backfilling with clean fill material.

Creosote Abatement, Hampton Roads Transit Authority, Norfolk, VA. Project Manager responsible for assessment, planning and implementation of abatement for dripping creosote on bridges along light rail corridor in Norfolk.

Environmental Services Associated with Construction of Hampton Roads Transit Authority Norfolk Facility. Project Manager responsible for various environmental services including coordination for disposal of contaminated dewatering fluid, underground storage closures, Site Characterization Reports associated with leaking USTs. Also treatment of contaminated soil to reduce disposal requirements.

Chesapeake Products Site Remediation. As Project Coordinator, responsible for planning and performance of initial cleanup under a Consent Order from the USEPA of this inactive fertilizer production facility. The initial cleanup included removal and disposal of heavy metals contaminated storm water from within one of the site buildings, as well as excess product piles from all site buildings. Following stormwater and product removal/disposal, on site buildings were demolished.

Tabb, VA, RCRA Closure of Industrial Plating Site. Engineer of Record responsible for production and quality assurance review of the Closure Report for the Container Storage Area Hazardous Waste Management Unit (HWMU) at the facility.

Newport News, VA, Production of Intergraded Contingency Plan (ICP) for the SemMaterials Facility. Project Manager responsible for production of ICP Plan which includes Spill Prevention, Control and Countermeasures (SPCC) Plan, Facility Response Plan (FRP) and Oil Discharge Contingency (ODC) Plan.

Hampton, VA, Production of Spill Prevention, Control and Countermeasures (SPCC) Plan for Sentara CarePlex Facility. The facility includes two 5,000-gallon ASTs for storage of fuel for emergency generators.

Park and Brambleton Aves. Site, Norfolk Redevelopment and Housing Authority, Site Assessments, UST Closure and Initial Abatement. Project Manager responsible for site assessment and underground storage tank closure. Also Initial Abatement activities reimbursed through the Virginia Petroleum Storage Tank Fund (VPSTF).

Norfolk, VA, Leaking Underground Storage Tank Investigation for the Norfolk Redevelopment and Housing Authority. Project Manager responsible for production of Initial Abatement Report

and Site Characterization Report for a heating oil UST and the site of a former gas station (two separate locations). The Work included separate investigations using a Geoprobe unit and production of separate reports.

Virginia Beach, VA, Oceana Salvage Lead Battery Site. Project Manager responsible for investigation, negotiation with regulatory agencies, as well as closure of two Hazardous Waste Management Units (HWMUs) and a Solid Waste Management Unit (SWMU) at this former automobile salvage yard.

Norfolk, VA, Leaking UST, Site Investigation and Remediation for the City of Norfolk. Project Manager responsible for determination of the proper procedure for closing the fuel underground storage tanks (USTs) at the City's Waste Management facility. Upon closure, one of the USTs was found to be leaking which resulted in the VDEQ opening a Pollution Complaint (PC) case. Subsequent activities have included production of a Site Characterization Report (SCR) which included an assessment of risks associated with the site. Remediation activities have included multiple free product removal events and monitoring.

Norfolk, VA, Intersection of Virginia Beach Blvd. and Ballentine Blvd., Leaking UST, Site Investigation and Remediation for the City of Norfolk. Project Manager responsible for performance of field work and reporting associated with a leaking fuel underground storage tank (UST). The UST was found during the installation of underground utilities. Upon tank removal, the VDEQ opening a Pollution Complaint (PC) case. Subsequent activities have included production of a Site Characterization Report (SCR) which included an assessment of risks associated with the site. Remediation activities have included multiple free product removal events and monitoring.

Grandy, NC, Oversight of Remedial Action. Project Manager responsible for oversight of work performed by environmental contractors and consultants at site of 7,000 gallon petroleum spill caused by the overturning of a petroleum tanker truck. The work also included providing recommendations to the property owner on the in-place abandonment or removal of underground storage tanks that were found on the site during the performance of the remedial activities.

Norfolk, VA, Riverside Terrace Apartments. Project Manager responsible for planning, field work and reporting of Site Characterization activities in response to a leaking underground storage tank. The Site Characterization included an evaluation of risks associated with the leaking UST and an evaluation of possible remedial options.

Richmond, VA, Flint Hills Resources. Project Manager responsible for design and installation of a double walled oil/water separator and a multi-phased treatment system at the facility. The treatment system consisted of two activated clay units and an activated carbon unit. In addition, designed and implemented a stormwater management system that significantly reduces the levels of facility related contaminants discharged to the James River.

Conley, GA, Koch Materials, Permeability Determination of AST Containment Area. Project Manager responsible for determination of the permeability of an above-ground storage tank containment area floor. The criteria used to evaluate the effectiveness of the containment area floor included the "72-hour rule", which is based on the requirements in federal regulations.

Chesapeake, VA, Chesapeake/Butts Station Site. Project Manager responsible for production and implementation of Closure Plan produced in accordance with the Virginia Hazardous Management Regulations that includes groundwater monitoring and contingent closure and post-closure procedures. The work involves possible demonstration of clean closure at the facility where drums of traffic paint and solvent were improperly disposed of.

Chesapeake, VA, Chesapeake/Traffic Engineering Site. Project Manager responsible for planning and performance of a Site Characterization at the City of Chesapeake Traffic Engineering Field Office. The site characterization was conducted to assess impacts of past traffic paint handling procedures at the site. The resulting Site Characterization Report concluded there was no adverse impact to the subject site as a result of the former traffic paint management practices at the facility.

Fort Eustis, VA, Building 2701 Site Characterization. Project Manager responsible for field investigation and production of Site Characterization Report (SCR) at Building 2701 at Ft. Eustis. Work includes soil vapor screening, soil sampling during monitoring well installation and groundwater sample collection and analyses at leaking underground storage tank location.

Norfolk, VA, Campostella Landfill Risk Assessment for the City of Norfolk. Project Manager responsible for assessment of potential risks from the landfill to human health and the environment. The risk assessment included establishment of constituents of potential concern and development of a site model including identification of possible human and ecological receptors.

Norfolk, VA, Campostella Landfill Storm Water Permitting. Project Manager responsible for regulatory compliance of Virginia Pollutant Discharge Elimination System (VPDES) permit as well as production of the Storm Water Pollution Prevention Plan (SWPPP) for the facility.

Burgess, VA, Jones & Frank. Project Manager responsible for planning and implementation of fieldwork, as well as production of Tank Closure Report, following the removal of underground storage tanks (USTs) at a former service station. Work included collection and analyses of soil samples as well as interpretation of analytical results.

Portsmouth, VA, Boiler Cleaning & Specialty Corp. Project Manager responsible for production of Spill Prevention, Control, and Countermeasure (SPCC) Plan, as well as Oil Discharge Contingency (ODC) Plan for the facility. The plans included recommendations regarding future operations at the facility.

Virginia Beach, VA, Landfill No. 2. Technical Lead responsible for program management and regulatory compliance of Virginia Pollutant Discharge Elimination System (VPDES) and industrial wastewater discharge permits for the facility. The VPDES permit was issued and enforced by the Virginia Department of Environmental Quality, while the wastewater discharge permit was issued and enforced by the Hampton Roads Sanitation District.

Chesapeake, VA, Elbow Road CDD Landfill. Technical Lead responsible for program management and regulatory compliance of Virginia Pollutant Discharge Elimination System

(VPDES). The VPDES permit was issued and enforced by the Virginia Department of Environmental Quality.

Virginia Beach, VA, Little Creek Amphibious Base. Technical Lead responsible for planning and implementation of investigation to determine disposal criteria for sediments contained in drainage channel at Little Creek Amphibious Base, in Virginia Beach, Virginia.

Hialeah, FL, U.S. Environmental Protection Agency, Region IV. As Project Manager conducted Remedial Investigation/Feasibility Study (RI/FS) at the B&B Chemical National Priority List (Superfund) site. Organic priority pollutant contamination in shallow subsurface soil and groundwater were focus of the RI/FS. The work included the production of project planning documents, field work, data interpretation and final report preparation. Field activities included completion of soil borings, installation of monitoring wells, soil sampling and groundwater sampling. Results of the RI/FS indicated that no remedial action was required.

Greer, SC, U.S. Environmental Protection Agency, Region IV. As Project Manager conducted Remedial Investigation/Feasibility Study (RI/FS) at the Elmore Waste Disposal Superfund site. Inorganic and organic priority pollutant contamination in shallow subsurface soil and groundwater were focus of the RI/FS. The work included the production of project planning documents, field work, data interpretation and final report preparation. Results of the RI/FS indicated that remediation of inorganic compounds in the surface soil, and inorganic and organic compounds in the groundwater were warranted.

U.S. Environmental Protection Agency, Region IV. As Project Manager conducted oversight of work being performed on ten potentially responsible party-led National Priority List (Superfund) sites in the Southeast United States. Oversight was conducted of remedial investigation/feasibility study through remedial design and remedial action. The work involved the review of planning documents, observation of field work and the review of draft through final reporting documents. In addition, provided technical support during negotiations with the potentially responsible parties.

Dade County, FL, U.S. Army Corps of Engineers, Hurricane Andrew Debris Sites. Project Engineer responsible for field investigation of temporary debris sites, which were formed during cleanup following Hurricane Andrew. Work included establishing sampling locations, collection of multimedia samples, interpretation of results and reporting. Goal of the work was to determine if a release of contaminants had occurred at the sites.

Burlington, NC, U.S. Army Corps of Engineers, Tarheel Army Missile Plant, Savannah District. Co Project Manager for two-phase Remedial Investigation. Responsible for the production of planning documents, fieldwork, and production of RI report for former defense contractor manufacturing plant. Work involved monitoring well installation and sampling in order to characterize nature and extent of organic compound contaminant plumes at various locations within the facility.

Atlanta, GA, Oglethorpe Power Corporation. Project Manager managing compliance audit of Underground Storage Tank systems owned and operated by Oglethorpe Power Corporation. Results of compliance audit resulted in removal and replacement of two-tank system. Conducted

subcontractor procurement and oversight of removal of existing system and installation of new system.

Charleston, SC, U.S. Navy. Project Engineer responsible for production of specifications to close underground fuel storage sump. Specifications followed RCRA Underground Storage Tank regulations.

Jefferson, OH, General Electric Corporation. Project Engineer responsible for planning, performance and reporting of work for Contamination Assessment associated with a leaking solvent underground storage tank at GE's facility in Jefferson. Performed field work and data interpretation. The work resulted in the production of a state approved Closure Plan.

Llano, TX, Confidential Client. As Project Engineer planned and conducted geo-environmental investigation at former pesticide plant in order to characterize subsurface conditions. The project included advancing soil borings and rock corings, as well as logging and classification of samples obtained.

Columbia, SC, Confidential Client. Served as expert witness for the plaintiff at a civil trial in which a commercial real estate developer requested reimbursement for loss of property value due to negligent management of adjacent Superfund site.

Environmental Due Diligence/Land Redevelopment/Brownfields

Wards Corner Site Redevelopment, Norfolk, VA. Project Manager responsible for Phase II Environmental Site Assessment and asbestos survey. Also Site Characterization Report and underground storage tank closure and abatement activities (reimbursable through the Virginia Storage Tank Fund (VPSTF)).

Portsmouth, VA, Site Environmental Evaluation, Confidential Client. Project Manager responsible for historical data review and data analyses on this potential redevelopment project off Swimming Point Walk. The work included estimation of possible environmental remedial costs should the project continue. The site had been affected by past contaminate releases from a nearby manufactured gas plant.

Portsmouth, VA, Wright Parcel VRP Site, Portsmouth Redevelopment and Housing Authority. Project Manager responsible for investigation, site characterization and Risk Assessment for this urban lead contaminated site. Work was reviewed by the Virginia VRP.

Virginia Beach, VA, Walgreens. For developer. Project Manager responsible for Phase I and II Environmental Site Assessments for this former US Post Office Facility which will be redeveloped into a Walgreens Drug Store. The property contains an underground storage tank that will need to be removed.

Portsmouth, VA, Phoebus Square Apartments. For private developer. Project Manager responsible for design and implementation of remedy for potential sub-surface vapor intrusion into the newly constructed apartment complex. The site was a former dry cleaner.

Norfolk, VA, Harris Teeter. Project Manager responsible for investigation and design of remedy for potential sub-surface vapor intrusion into the newly constructed Harris Teeter store and processing the site through the Virginia Voluntary Remediation Program (VRP). The site was the site of a former dry cleaners.

Hampton, VA, Riverdale Plaza Shopping Center Dry Cleaners Site. Project Manager responsible for initial investigation, characterization and remediation of soil and groundwater contamination from a former dry cleaners at the shopping center. The work included contaminated soil excavation and disposal as well as in-situ groundwater (bio) remediation. The project was performed under the requirements of the Virginia Voluntary Remediation Program.

Phase I Environmental Site Assessment and Limited Regulatory Compliance Review, Aero Manufacturing Corp., Beverly, MA. Project Engineer responsible for site visit and production of report.

Environmental Due Diligence, Smithfield Foods Corp. As Project Manager responsible for performance of ESAs and Limited Compliance Reviews at various facilities nationwide. The work is performed as part of the overall due diligence in preparation for purchase of the properties by the client.

Fairlane Green Development, Allen Park, Michigan; Methane Mitigation Plan Review. Project Engineer responsible for review of and comment on Methane Mitigation Plan and preliminary design for a proposed 190-acre commercial development to be constructed on a former industrial landfill. The work included estimation of the cost of the proposed mitigation features.

Military Hwy and Indian River Rd., Virginia Beach, VA; S. L. Nusbaum Realty. As Project Manager responsible for Phase II Environmental Site Assessment at the property that contains a dry cleaner and closed service station. The work included preparation of documentation in support of procuring a “comfort letter” from the Virginia Department of Environmental Quality (DEQ) confirming limitation of liability as a Contiguous Property Owner (CPO) as defined under the Virginia Brownfield Restoration and Land Renewal Act or as a Bona Fide Prospective Purchaser (BPP) as defined under the Federal Small Business Liability Relief and Brownfields Revitalization Act.

Benn’s Grant Property Redevelopment, Smithfield, VA. Various Parties. Project Manager responsible for performance of Phase I and Phase II ESA at the Benn’s Grant property. The site contains an active soil mining operation and a closed debris landfill. The landfill contains elevated levels of methane. The work included investigation and design for methane mitigation cut-off trench to accommodate commercial development of the landfill.

Environmental Due Diligence, Bethlehem and Blue Ridge Landfills, PA, BFI/Canada. Project Engineer responsible for performance of Phase I Environmental Site Assessments and limited compliance reviews at the Bethlehem and Blue Ridge Landfills in PA. The work was performed in support of the purchase of the holding company (IESI) by BFI/Canada.

Lake Archway Subdivision, Virginia Beach, VA, Newlight Associates. Project Manager responsible for consulting and technical support to developer at former inert debris landfill and

site of proposed residential development. High levels of methane had been detected in the fill area. The work included production of a Feasibility Study which indicated residential development of the landfill was feasible provided proper engineering controls were in place. Provided technical support during legal proceedings including production of a Methane Mitigation Plan and design of a methane mitigation system. Current work includes inspection of the single-family houses during installation of the methane mitigation features and certification of the installation.

Chesapeake, VA, Quailshire Estates Residential Redevelopment. For Builders. Project Manager responsible for initial investigation and development of methane remedy for this residential development constructed on a former landfill.

Williamsburg, VA, Quarterpath Crossing Shopping Center. For Developers. Project Manager responsible for site investigation, remedy design and implementation. This shopping center was constructed adjacent to a former City sanitary landfill. The selected remedy included installation of sub-slab methane barrier system in buildings closest to the landfill.

Colonial Heights, VA, Landmark Design Group. Project Manager responsible for assisting client with development of retail shopping center on a former municipal solid waste landfill. Issues addressed include settlement of waste, landfill gas, safety and regulatory compliance

Compeco Dye Works and Dry Cleaners, Norfolk, VA, Phase II Environmental Site Assessment. Project Manager responsible for performance of Phase II ESA at this former Dry Cleaners and carpet dyeing facility. The project was performed to facilitate sale of the property.

Compeco Dry Cleaners, Norfolk, VA; Phase II ESA; Harvey-Lindsey Realty. As Project Manager responsible for performance of Phase II ESA at this former Dry Cleaners. The work included soil and groundwater sampling and analyses, as well as indoor air monitoring.

Brewery Site, Norfolk Redevelopment and Housing Authority, Demolition Oversight and Phase II Environmental Site Assessment. Project Manager responsible for oversight with regard to environmental issues during demolition of existing buildings. Remedial Action Work Plan (RAWP) and Risk Assessment (RA) performed for entry of the Site into the Virginia Voluntary Remediation Program (VRP). The Site contained a former Brewery and two Dry Cleaners.

Berkley IV Redevelopment Site, Norfolk Redevelopment and Housing Authority, Site Assessments and Remedial Action. Project Manager responsible for site assessments, remedial design based on results of the assessments and remedial action. Also development of two Site Characterization Reports (SCR) reimbursed through the Virginia Petroleum Storage Tank Fund (VPSTF).

Decker Parcel (2300 Monticello Ave), Norfolk Redevelopment and Housing Authority, Phase II Environmental Site Assessment. Project Manager responsible for performance of a Phase II ESA to obtain data for entry of the Site into the Virginia Voluntary Remediation Program (VRP).

C & C Auto Parcel, Norfolk Redevelopment and Housing Authority, Phase II Environmental Site Assessment. Project Manager responsible for performance of a Phase II ESA to obtain data for entry of the Site into the Virginia Voluntary Remediation Program (VRP).

Disposition Parcels 9 and 24, Norfolk Redevelopment and Housing Authority, Phase I and II Environmental Site Assessments. Project Manager responsible for performance of Phase I and II ESAs at this former industrial (Berkley Feed Corporation) property.

Compeco Dry Cleaners, Princess Ann Rd., Norfolk, VA, Phase II Environmental Site Assessment. Project Manager responsible for performance of Phase II ESA to determine extent of dry cleaning solvent in the soil and groundwater at the Site.

Kempsville Shops, City of Virginia Beach, VA, Phase II Environmental Site Assessment and Risk Assessment. Project Manager responsible for performance of Phase II ESA and Risk Assessment to obtain data for entry of the Site into the Virginia Voluntary Remediation Program (VRP). The Site is a former dry cleaners and service station that is proposed as a future site of a day care center.

Albano Cleaners, Princess Ann Rd., Virginia Beach, VA, Phase II Environmental Site Assessment. Project Manager responsible for determination of vertical extent of dry cleaning solvent beneath the floor of the facility.

Suffolk Plaza, S. L. Nusbaum Realty, Site Investigation. Project Manager responsible for performance of investigation to determine origin of landfill gas odor at that Site which was constructed on a former waste fill area.

Portsmouth and Virginia Beach, VA, Branscome Company, Environmental Site Assessments (ESAs). Project Manager responsible for planning and performance of Phase I and II ESAs at sites in Portsmouth and Virginia Beach, VA. The ESAs were performed as due diligence associated with property transactions and included sampling of various media for the possible presence of contamination. Both sites contained operating asphalt manufacturing facilities.

Portsmouth, VA, Cooper, Spong & Davis, Site Characterization. Project Manager responsible for characterization of the former Hagwoods dry cleaners site. The work included collection of various media samples to determine the presence of subsurface contamination, conceptual remedial design and estimation of remedial costs. SCS was retained by CSD as an expert witness in support of litigation on behalf of the Portsmouth Redevelopment and Housing Authority and eventual entry of the Site into the Virginia Voluntary Remediation Program (VRP).

South-Side Hampton Roads, VA, Gees Group, Environmental Site Assessments (ESAs). Project Manager responsible for performance of Phase I ESAs at several sites in south-side Hampton Roads. The sites included River Pointe in Portsmouth (2003 Homearama location) and the Baxter Run shopping center in Virginia Beach.

Norfolk, VA, Riverside Terrace Apartments. Project Manager responsible for planning, field work and reporting for an Environmental Site Assessment (ESA) of the Apartments in conformance with ASTM E 1527 and Fannie Mae Delegated Underwriting and Servicing (DUS) Guide requirements. The ESA included limited lead-based paint and asbestos sampling.

Norfolk, VA, Jewish Community Center. Project Manager performed Phase I Environmental Site Assessment as part of a property transfer. Emphasis was placed on asbestos and wetlands issues.

Chesapeake, VA, Chesapeake/Jordan Bridge Site. Project Manager responsible for planning and performance of a Site Characterization at the City of Chesapeake Jordan Bridge site. The site characterization was conducted to investigate historical debris handling activities, identify the presence/absence of significant quantities of “non-inert” fill material at the site, and assess site impacts as a result of historical debris handling activities in response to a Letter of Warning (LOW) from the state environmental regulatory agency. The LOW alleged the site was in violation of the Virginia Solid Waste Management Regulations. The resulting Site Characterization Report concluded that significant quantities of non-inert fill material were not present at the site. Field screening and laboratory analytical results indicated no adverse impacts to soil or nearby surface water bodies as a result of the historical debris handling activities.

Virginia Beach, VA, The Breeden Company. Project Manager responsible for production of Phase I Environmental Site Assessment up-date report. The report included up-dated regulatory listings from environmental databases maintained by Visa Information Systems. In addition, the report included the status of actions items performed as part of the state Voluntary Remediation Program.

VA, Albano Cleaners. Project Manager responsible for planning and implementation of response to state regulatory agency request for evaluation of data obtained during limited Phase II at the client’s Haygood Shopping Center location in Virginia Beach. The response included results of risk assessment modeling that indicated the theoretical risk is within the acceptable range for carcinogens and below the target risk for non-carcinogens. Also a preliminary investigation at the Westwood location in Portsmouth to determine if contamination exists due to past dry cleaning activities.

Landfill Gas

Higgerson-Buchanan Construction and Demolition Debris Landfill in Chesapeake, VA. Landfill Gas (LFG) Collection and Destruction System Design/Build. As Project Director, design of LFG collection system including 12 extraction wells for odor control. The system includes a blower/flare unit for LFG destruction. The entire system was installed by SCS.

Montgomery Regional Solid Waste Authority, Mid-Country Landfill, Christiansburg, VA. Landfill Gas to Energy Feasibility Study. Project manager responsible for performance of pump test, landfill gas modeling and assessment of the feasibility of a landfill gas to energy project.

Quarantine Road Landfill, Baltimore, MD, Ameresco Federal Solutions. Director responsible for coordination of this multimillion dollar project. The project included a feasibility/pump test, design of a LFG collection/destruction system and compressor/dehydration unit. The project also includes installation of the compressor/dehydration unit and LFG pipeline to the end user of the gas. The project is expected to go on-line in the summer of 2008.

Cumberland County Improvement Authority, NJ. Landfill Gas to Energy Feasibility Assessment. Project Engineer responsible for production of the Feasibility Assessment at the Cumberland County Landfill that included analyses of technologies to produce electricity using landfill gas for on-site use as well as a discussion of alternatives for off-site direct use of landfill gas.

Camp Lejeune, NC, Exelon Services Federal Group (ESFG), Landfill Gas to Energy Project. Responsible for assisting ESFG with development of a renewable energy project for Marine Corps Base Camp Lejeune using multiple waste streams produced by the Camp to recover useful energy. Specific area of responsibility includes converting the facility's landfill passive gas extraction system to an active system and design and build of an approximate 1-mile pipeline from the landfill to the end use point.

Nationwide, Landfill Gas to Energy, Due Diligence. Project Manager responsible for evaluation of landfill gas to energy projects at solid waste landfills in five states. Purpose of the project was to assist the client with quantifying the value of the projects. The projects included landfill gas production modeling at each site, as well as production of a report that summarized the modeling results. The reports also included a summary of the regulatory status of each landfill and an evaluation of the condition of the landfill gas collection system.

Surry and Prince George Counties, VA, Landfill Gas to Energy Oversight. Project Engineer responsible for verification of construction activities associated with a 19-mile landfill gas pipeline from the Atlantic Waste Disposal, Inc. (AWDI) landfill in Waverly, VA to an industrial facility in Hopewell, VA. Construction verification was conducted for the institution financing the project. The Work included review of construction plans and permitting information as well as visits to the project to determine the progress.

Newport News, VA, Landfill Gas to Energy Focused Feasibility Study and Design. Project Manager responsible for production of focused study to determine the feasibility of a landfill gas to energy (LFG) project at the City's Denbigh Landfill. The proposed end-users are a middle school and proposed recreation center. The study included a LFG recovery projection as well as an evaluation of the technical, financial and regulatory aspects of the proposed project. Upon acceptance of the FFS results, the City authorized SCS to complete a final design and bid package.

Houston and Wayne Counties, GA, LFG Extraction System Designs. Sr. Reviewer responsible for oversight and Professional Engineer certification of active landfill gas (LFG) extraction system designs at the county's municipal solid waste landfills. The Work included production of plans and technical specifications as well as LFG Collection and Control System Design Reports.

Norfolk, VA, Campostella Landfill. Project Manager responsible for satisfying regulatory compliance issues associated with formal closure of the Landfill. Landfill gas (LFG) related issues included production of LFG Monitoring and Remediation Plans, design and construction of a LFG migration control system and a permit amendment to modify the LFG compliance boundary while leaving the facility boundary in place.

Apopka, FL, Pine Ridge Landfill. Project Engineer responsible for production of a minor modification to the existing operating permit for the Pine Ridge Recycling and Disposal Facility. The permit modification was for the installation of an active gas extraction system intended to stop the migration of landfill gas across the facility's compliance boundary.

Waverly, VA, Atlantic Waste Disposal, Inc. (AWDI). Project Engineer responsible for conceptual design (Phase 2 and 3) and production of bid documents (Phase 1) for active landfill

gas extraction system at AWDI's sanitary landfill. The conceptual design system will have an eventual capacity of greater than 16,000 scfm. Phase 1, which will be constructed by October 2000, will have a capacity of more than 4,300 scfm.

Suffolk, VA, ZAPCO Energy Tactics. Project Engineer responsible for annual emission statement for landfill gas-to-energy (LFGE) facility at the SPSA Regional Landfill in Suffolk, Virginia. Statements include estimate of Volatile Organic Compound (VOC) and NO_x emissions and are submitted to the state regulatory agency along with supporting information and calculations.

Montgomery County, Christiansburg, VA. Project Engineer responsible for design and production of plans and specifications for air injection curtain at the Mid-County Landfill. The air curtain is intended to interrupt migration of landfill gas into the facility Recycling/Processing Facility (RPF).

Virginia Beach, VA, Landfill No. 2. Technical Lead responsible for design of gas probe network, production of Gas Control Plan, installation of monitoring probes, and monitoring program. Also, production of Gas Remediation Plan and implementation of remedial measures in response exceedance of regulatory limit for methane at the facility compliance boundary.

Allegheny Energy Resources, Inc. Project Manager responsible for monitoring and operation of AER owned landfill gas extraction/destruction system at the City of Virginia Beach Landfill No. 2. Also, design of expansion of the system and oversight during construction of the expansion.

Newport News, VA, Menchville Road Landfill. Sr. Project Engineer responsible for remedial site investigation and design of perimeter landfill gas control system in response to methane present at concentrations exceeding action levels at the facility's compliance boundary. Also, design and installation of composite gas barrier cut-off wall at the compliance boundary.

Rivanna Solid Waste Authority, Ivy Landfill, Charlottesville, VA:

- **Landfill Gas (LFG) Model and Beneficial Reuse Analysis.** Technical Lead responsible for planning and production of LFG Model and Beneficial Reuse Analysis. The work included development of a site model to characterize the anticipated LFG stream as input to later evaluation of constraints and limitations associated with various LFG utilization alternatives. In addition, interpretation of the site model and evaluation of various LFG utilization alternatives including flaring, development of pipeline quality gas, energy conversion, direct fuel, or indirect energy uses via various heat exchange mechanisms was conducted.
- **Landfill Gas System Design and Construction.** Technical Lead responsible for design and construction of active landfill gas extraction system at the facility. Design included modeling of landfill gas production, blower and flare sizing, and placement of 32 gas extraction wells.

Solid Waste Engineering/Permitting

City of Virginia Beach Annual Solid Waste Services Contract. Contract Manager responsible for allocation of resources, as well as financial and technical performance of projects performed for the City under the Contract. Projects include closure design/CQA, groundwater and landfill gas monitoring, air permit compliance, annual capacity report.

Lamberts Point Action Plan and Remedial Actions, City of Norfolk. Project Manager responsible for plan of action related to potential release of solid waste from the Lamberts Point Golf Course (former landfill) into the adjacent Elizabeth River. The Action Plan and remedial actions prevented the site from being classified an “open dump.”

City of Virginia Beach General Solid Waste Services Contract. Contract Manager responsible for allocation of resources, as well as financial and technical performance of projects performed for the City under the Contract. Projects include compliance monitoring/reporting, groundwater data analyses and reporting, air permit compliance reporting, annual capacity evaluations, closure designs and bid package production.

Fairfax Co., VA, Crippen Stump Dump, Closure Plan. Responsible for production of the Closure Plan for the Crippen Stump Dump Construction Demolition Debris (CDD) facility. The Plan satisfied the requirements of the Virginia Solid Waste Management Regulations and contained a Landfill Gas Management Plan.

Virginia Beach, VA, SPSA Waste Transfer Station Site Plan. Project Manager responsible for analyses and production of conceptual site plan for the proposed Southeastern Public Service Authority waste transfer station at the City of Virginia Beach Landfill No. 2. Analyses included interviews with City and SPSA personnel to gain an understanding of the goals and concerns of all parties. Final plan incorporated input obtained during analyses.

Jacksonville, FL, North Landfill Leachate Study. Project Engineer responsible for analyses of historical data to determine leachate generation and removal quantities and characteristics at the City’s North Landfill. The project was in response to a leachate discharge event at the Landfill. The work involved using the HELP model to estimate expected leachate generation rates.

Chesapeake, VA, Municipal Landfill. Project Engineer responsible for review of historical information and facility inspection associated with the certification to end post-closure care at the closed landfill.

Israel, Tahal Group, Central Waste Disposal Site (Effe Landfill). Project Engineer responsible for preliminary design for regional municipal solid waste (MSW) landfill located south of the Dead Sea. The landfill site is a former phosphate mining spoils discharge area. Expected waste acceptance rate of the landfill is more than 3000 tons per day. Design includes stability, bearing capacity and settlement analyses as well as production of design drawings - Project manual and technical specifications.

Frederick County, Winchester, VA. Project Engineer responsible for portions of permit amendment for existing Frederick County Sanitary Landfill. Modifications to landfill include vertical expansion and alternative liner in-place of conventional Subtitle D design. Permit

Amendment includes modification of Design Drawings, Design Report, Technical Specifications, Construction Quality Assurance (CQA) Plan, Closure and Post Closure Care Plan and Landfill Gas Management Plan.

Charlotte, NC, Renaissance Park. Project Engineer responsible for design and production of construction drawings for leachate seep control measures at the closed landfill site now being used as a golf course. The control measures included an under- drain system combined with surface water control features.

Suffolk, VA, Southeastern Public Service Authority (SPSA). Project Manager responsible for planning and execution of evaluation of the soil cover on the SPSA Regional Landfill. The evaluation included direct physical measurements of the soil cover thickness and determination of the engineering properties. The results of the evaluation were submitted to the State regulatory agency to demonstrate in-place closure of the side-slopes of the landfill.

Newport News, VA, Solid Waste Disposal Facility No. 2 Cells 1, 2 and 3 Closure. Technical Lead responsible for implementation of Construction Quality Assurance Plan and certification of construction of 54 acre closure area. Work included modifications to the state approved Closure and Construction Quality Assurance Plans for the facility prior to certification.

Virginia Beach, VA, Phase 2A Landfill Expansion. Technical Lead responsible for implementation of Construction Quality Assurance (CQA) Plan and certification of construction of 16-acre expansion area. An amendment to the CQA Plan was also included in the work.

Chesapeake, VA, Elbow Road CDD Landfill. As Technical Lead conducted and supervised design and permitting for construction demolition debris landfill. Work involved geotechnical investigation, slope stability analysis, settlement analyses, landfill design, groundwater and surface water monitoring program design, establishing closure and post-closure procedures, establishing operations and maintenance procedures.

Marion, VA, Merillat Industries. Project Manager responsible for obtaining state solid waste permit for boiler facility under the requirements for energy recovery and incineration facilities.

Henrico County, VA, Department of Public Utilities, Landfill No. 3. Technical Lead responsible for modification of Intergraded Closure Plan. Modifications to the plan included addressing State regulatory agency comments on draft plan.

Columbia County, GA, Sampson Debris Landfill. As Project Manager conducted and supervised design and permitting for construction and demolition (C&D) landfill. Work involved geotechnical investigation, slope stability analysis, landfill design, groundwater and surface water monitoring program design, establishing closure and post-closure procedures, establishing operations and maintenance procedures.

Columbia County, GA, Landfill Construction. As Resident Engineer interacted with contractor and owner, interpreted construction plans and specifications; conducted weekly construction meetings, and produced meeting minutes; conducted site visits for regulatory personnel; and facilitated minor modification requests, production, and submittal of CQA Certification Report.

Augusta, GA, Aerobic Landfill Bioreactor. Project Manager responsible for design, construction, operation, monitoring, and evaluation of an Aerobic Landfill Bioreactor pilot study for the Southeastern Technology Center. The purpose of the project was to increase the rate of degradation of waste, decrease the production of methane and improve the quality of leachate in an existing landfill. The study involved the introduction of air into the waste mass and leachate recirculation.

Columbia County, GA, Landfill Gas/Groundwater Contamination Assessment. As Project Engineer conducted and evaluated data from landfill gas investigation at the Columbia County Landfill. The goal of the investigation was to determine the contribution of landfill gas to groundwater contamination at the facility.

Savannah River Site, SC. Conducted Construction Quality Assurance and safety inspections during the closure of the sanitary landfill at the DoE's Savannah River Site.

Groundwater Services

Ft. Pickett, VA, Sanitary Landfill. Project Manager responsible for production of a Nature and Extent Study (NES) and Proposal for Presumptive Remedy (PPR) following the exceedance of Groundwater Protection Standards at the Landfill. The NES and PPR will be incorporated into a Corrective Action Plan which will be a component of the facility's solid waste management permit.

Suffolk, VA, SPSA Regional Landfill. Project Engineer responsible for response to state regulatory agency comments on the facility's annual report including up-dating the groundwater contour map.

Norfolk, VA, Campostella CDD Landfill. Project Manager responsible for establishment of groundwater monitoring well network and production of Groundwater Monitoring Plan for the facility. Initial Phase 2 groundwater monitoring included establishment of Appendix 5.1 constituent background concentrations and Groundwater Protection Standards (GPS). The work also included production of a Nature and Extent Study (NES) and a Proposal for Presumptive Remedy (PPR), including a risk assessment caused by groundwater contamination at the Landfill, following the exceedance of GPSs.

Newport News, VA, Solid Waste Disposal Facility No. 2. Technical Lead responsible for planning, coordination and regulatory reporting (including the Annual Water Quality Monitoring Report) of the detection groundwater monitoring program at the facility. The work also included planning and production of Groundwater Quality Assessment in response to a Statistically Significant Increase (SSI) in sampling parameter concentrations in down-gradient monitoring wells as compared to up-gradient wells. Demonstration resulted in facility being allowed to remain in detection monitoring rather than proceeding to the more regulatory onerous Assessment Monitoring Program. Also, Groundwater Monitoring Plan revision (permit amendment).

Virginia Beach, VA:

- **Landfill No. 2.** Technical Lead responsible for planning, coordination and regulatory reporting (including the Annual Water Quality Monitoring Report) of the assessment groundwater monitoring program. Work included coordination with state regulatory agency during rehabilitation of the monitoring well system. Abandonment of existing wells as well as locating and installation of new and replacement wells. Confirmation sampling was performed during assessment monitoring to confirm the results of the initial monitoring event and to attempt to eliminate several constituents from the remainder of the monitoring program.
- **Mount Trashmore Park.** Technical Lead responsible for Groundwater Contamination Assessment planning, implementation, and reporting to state regulatory agency in response to elevated levels of inorganic and organic compounds detected in groundwater monitoring wells at the facility. Resulting analysis indicated that compounds with elevated concentrations were not migrating off-site and were not a threat to public health and the environment (based on risk assessment modeling).

Ft. Eustis, VA, Landfills 1, 7, and 15, USACE Baltimore District. Technical Lead responsible for planning, coordination and regulatory reporting of the detection groundwater programs at the landfills. Reporting included the production of both interim and annual groundwater monitoring reports.

Ft. Story, VA, Landfill 2, USACE Baltimore District. Technical Lead responsible for planning, coordination and regulatory reporting for the groundwater monitoring at the landfill.

Chesapeake, VA, Elbow Road Farm, Inc. CDD Landfill. Technical Lead responsible for planning, coordination and regulatory reporting of the Phase II groundwater monitoring program at the landfill. The Phase II program was established in response to a SSI that was detected during the Phase I program. Work included request for variance to the state Department of Environmental Quality to discontinue groundwater monitoring at the facility.

Isle-of-Wight County, VA, County Landfill. Technical Lead responsible for planning, coordination and regulatory reporting of detection groundwater monitoring program at the facility.

Columbia County, GA, Grovetown Landfill. Project Manager responsible for planning, coordination and regulatory reporting of detection groundwater monitoring program at the facility. Work included demonstration to the state regulatory agency that landfill gas was affecting groundwater quality.

Pickens County, SC:

- **Easley Landfill.** Project Engineer responsible for planning, coordination and regulatory reporting of detection groundwater monitoring program at the facility. The work included production of the Groundwater Monitoring Plan and the Statistical Analysis Plan.

- **Central Landfill.** Project Engineer responsible for planning, coordination and regulatory reporting of detection groundwater monitoring program at the facility. The work included production of the Groundwater Monitoring Plan and the Statistical Analysis Plan.

Union County, SC, County Landfill. Project Engineer responsible for planning, coordination and regulatory reporting of detection groundwater monitoring program at the facility. The work included production of the Groundwater Monitoring Plan and the Statistical Analysis Plan.

Charlottesville, VA, Rivanna Solid Waste Authority, Ivy Landfill. Technical Lead responsible for Technical Peer Review of Nature and Extent Study, which characterized the nature and extent of groundwater contamination at the landfill. A consultant retained by the landfill owner produced the document.

Henrico County, VA, Department of Public Utilities, Landfill No. 3. Technical Lead responsible for revising and updating of the facility's Water Quality Monitoring Plan.

Solid Waste Planning

Hampton Roads Planning District Commission (HRPDC), VA:

- **Solid Waste Management Study for the South Hampton Roads Region.** As Project Manager, performed study to determine how the Region should manage their solid waste following the termination of use and support agreements between the regional authority (Southeastern Public Service Authority) and member communities. The Study covered a 40-year planning period. The original study was performed in 2008 and an update was performed in 2011.
- **Regional Recycling Rate Calculation and Reporting.** As Project Manager assisted the HRPDC with gathering data from individual recyclers within the South Hampton Roads Region, calculating the regional recycling rate and reporting the results to the state of Virginia.
- **Regional Solid Waste Management Plan Revision.** As Project Manager prepared revised Plan for the Southside Hampton Roads Region. The Plan is a requirement of the Virginia Administrative Code (VAC) and covers an eight-municipality Region.

City of Norfolk, VA:

- **Curbside Recycling Feasibility Study.** As Project Manager performed a study to determine the most efficient means of collecting and handling the City's residential and commercial curb-side recycling materials. The study compared the options of using City staff to perform collections versus contracted services.
- **Recycling Materials Audit.** As Project Director performed a baseline audit to establish the "universal ton" of single-stream recyclables directed to the City's privately contracted materials handling vendor.

- **Transfer Station Feasibility Study.** As Project Manager performed study to determine the feasibility of city ownership of the regionally-owned waste transfer station located within city limits. The study included a list of “pros and cons” of city ownership as well as a financial analyses with options including city staff operation versus contracting with private firms.
- **Household Hazardous Waste (HHW) Operations Plan (OP).** As Project Manager production of HHW OP that established procedures for accepting and handing HHW from citizens.
- **Yard Waste Disposal Study.** As Project Director conducted study to determine the most effective means of handing/disposal of curb-side collected yard waste. The work included evaluation of yard waste transfer locations within the city.

Water Resources

Sandersville, GA, E.C.C. American, Inc:

- **Proposed Kaolin Processing Facility.** As Project Engineer designed and supervised field work for aquifer yield investigation at a proposed kaolin processing facility in central Georgia. The investigation was conducted to determine the suitability of the site for the facility and included the installation of a series of test holes to help determine the possible yield from proposed production water well.
- **Groundwater Investigations and Reporting.** As Project Engineer performed investigations and produced reports associated with permit applications to withdraw groundwater from regional aquifer in the coastal plain of Georgia. The work included determining the effect of proposed new groundwater withdrawals on nearby water wells and the aquifer. Determinations were made using analytical models and aquifer hydraulic parameters from field aquifer tests, which were performed as part of the work.
- **American, Inc., Deep Step.** Project Engineer responsible for planning and performance of work for a dewatering plan at 60-acre kaolin mine. The work included the design, installation and testing of a 1200 gallon per minute production water well. An aquifer test was performed to determine the hydraulic parameters of the aquifer. Dewatering scenarios were evaluated using the U. S. G. S. produced MODFLOW groundwater flow model. The result of work was a design for dewatering system at the mine.

GA, Internal Revenue Service. As Project Engineer performed evaluation of kaolin mine dewatering scheme submitted to the I. R. S. in support of a property appraisal. The evaluation was conducted using the U.S.G.S. produced MODFLOW groundwater flow model.

Oak Ridge, TN, Oak Ridge National Laboratory. Project Engineer responsible for planning and performance of hydraulic conductivity determinations of fractured bedrock aquifer. Determinations were made by isolating fractured areas of the bedrock using inflatable rubber packers, pressuring the isolated areas, than observing the rate of decrease in pressure. Also responsible for data interpretation and reporting of results.

Jacksonville, FL, U. S. Navy. Project Engineer responsible for planning and performance of aquifer testing at a former disposal area owned by the U. S. Navy. The purpose of the testing was to determine the hydraulic characteristics of the upper most aquifer in order to design a proposed groundwater extraction system.

Marietta, GA, Lockheed Marietta. Project Engineer responsible for planning, performance and reporting of groundwater flow and contaminant transport modeling. Work was performed in order to determine the flow characteristics of the surficial saprolite aquifer, as well as predict the migration rate of organic solvent plume. The modeling was performed using the U. S. G. S. produced MODFLOW groundwater flow model along with a particle tracking module.

Geotechnical Engineering

Patagonia, AZ. Project Engineer responsible for global and veneer stability analyses on Town of Patagonia (TOP) Landfill expansion. Analyses were conducted using computer program PCSTABL5M.

James City County, VA, Henry S. Branscome, Inc. Project Manager responsible for review of existing subsurface information and reclamation activities at the client's Lee's Pit mine. The purpose of the review was to determine the suitability of the site for future industrial development. Recommendations were made in a letter to the client, which was submitted to the County in support of a special use permit.

Suffolk, VA. As Sr. Project Engineer conducted inspection of City water supply dam following hurricane Floyd. The dam had been breached in several areas causing severe erosion damage. Work included dam inspection and recommendation to the City for temporary repair. Also, cost estimate for repair of the dam and spillway for City submission to FEMA.

Sandersville, GA, E.C.C. America. As Project Engineer designed and supervised fieldwork for geotechnical investigation at proposed earthen dam site. The investigation was conducted to determine the suitability of the site for the dam and included a series of soil borings followed by data interpretation and a report.

Various Clients. As Project Engineer conducted numerous tests to determine the in-situ permeability of compacted clay liners at hazardous and sanitary landfills. Used various configurations of the double-ring infiltrometer including open and closed inner rings. Contributed to the production of the ASTM method the sealed inner ring double ring infiltrometer testing method.

Atlanta, GA, Various Clients. As Project Engineer developed work plan, supervised or conducted field control for earthwork at various sites in the Atlanta area. Work involved inspection of fill compaction including moisture and density determinations and bearing capacity determinations.

Atlanta, GA, AT&T. As Project Engineer produced calculations and final design of a sheet pile wall. The wall was installed to prevent failure of an excavation face made during the removal of an underground storage tank.