



RT Environmental Services, Inc.

Your Solution-Oriented Environmental Services Firm

PROFESSIONAL PROFILE

GARY R. BROWN, P.E., Q.E.P., C.M.C., L.S.R.P., C.P.

REGISTRATIONS/CERTIFICATIONS

Professional Engineer in the States of New Jersey, New York, Pennsylvania, Florida, Connecticut, Michigan, North Carolina, Virginia, Ohio, West Virginia, New Hampshire, South Carolina, Maryland, Indiana, Tennessee, District of Columbia, Delaware, Rhode Island, Oklahoma, Maine & Massachusetts.

Qualified Environmental Professional
Certified Microbial Consultant
NJ Licensed Site Remediation Professional
Ohio Certified Professional

FIELDS OF COMPETENCE

Expert witness for environmental, engineering and construction claims. Managing large interdisciplinary projects, including CERCLA remediation and Brownfields projects; remedial construction management; facilities engineering and engineering management; stormwater management; solid, hazardous waste and wastewater collection and treatment system engineering; siting and feasibility studies; regulatory and legal liaison; permit acquisition; air and water discharge permitting; indoor air quality; microbial assessment and abatement; asbestos; lead abatement; environmental liability management, multi-disciplinary troubleshooting; and mold investigation/evaluation.

EXPERIENCE SUMMARY

Over 39 years of diversified engineering experience including 25 years of engineering management experience. Work has included concept development, permitting, design projects, including complex facility upgrading, expansion, and industrial closure Brownfields redevelopment projects. Technical achievements include implementation of major remediation projects and state-of-the-art improvements at environmental management facilities in the public and private sectors. Served as project engineer or manager on projects with multi-million dollar construction costs involving complex permitting and multiple technical disciplines, including work on projects where upgrading had to occur while ongoing facility operations had to be maintained without interruption. Also project manager on complex, large scale Superfund projects and expert witness in Superfund cost recovery, engineering standard of care tank release and building moisture, water damage and related mold impact cases.

EDUCATION

B.S., Environmental Engineering, Syracuse University, 1973

**Additional Coursework: Management, Supervision, Hydrogeology,
Data Processing and Business**

KEY PROJECT EXPERIENCE

Prepared expert reports for petroleum releases at super highway service areas, flooding and building material water damage claim for Chadds Ford residence, storm water influenced/ pool construction failure in Pennsylvania and large residential building project in Princeton, NJ. Princeton project involved mold and water damage, evaluation of building envelope water leakage, and estimates for reconstruction over a several year period. Evaluate validity of claims and offer opinions on cost to resolve and responsibility.

CERCLA Project Coordinator for the Henderson Rd. Superfund Site Project, with a cost of \$15,000,000. Design and construction elements of a 160 gpm groundwater recovery and treatment system, volatile extraction system and landfill closure/capping project. Work included remedial design, preparation of work plans, stormwater system and channel upgrading, gas venting, biological treatment and operation and maintenance services after construction completion.

Prepared expert reports on two Maryland projects, one involving suspect slope failure, and one involving waste disposal on residential property.

Principal in charge for numerous Brownfields and Land Recycling projects in Pennsylvania, New Jersey and Maryland. Major projects were completed in Philadelphia and Downingtown, Pennsylvania, Bridgeton, New Jersey, Columbus, Ohio, Manheim, Pennsylvania and Hamilton Township, New Jersey. Work included remediation of PCB releases prior to residential redevelopment and petroleum release remediation involving a buried historical wastewater treatment plant. Additional projects include former major paper and plumbing products manufacturing facilities, transformer manufacturing, service station and dry cleaning sites, asbestos and chemical manufacturing facilities, and metal and parts manufacturing facilities. Site work included addressing soil and groundwater releases and waste management units. Two Baltimore projects included soil vapor extraction and sitewide investigation work for solvent & tank releases at large scale sites involved in aircraft parts and systems manufacturing.

Mr. Brown has lectured at stormwater seminars for the Pennsylvania Chamber of Business Industry and for Half Moon Seminars in New York, New Jersey, Pennsylvania, and Maryland. He has also served as lead engineer for expert work involving stormwater issues at an agricultural property in northern New Jersey. He has provided engineering evaluations and recommended proper implementation of stormwater management measures on an expert case in Montgomery County, Pennsylvania, and for a Superfund site in New Jersey.

Mr. Brown has prepared Operations and Maintenance Manuals for wastewater treatment facilities up to 20 MGD in size. The largest system included a regional wastewater collection and ocean outfall system.

Preparation of air emissions permits for more than five asphalt plants in Pennsylvania. Includes preparation of emissions estimates from asphalt production and fuel storage tanks.

Principal in charge for indoor air quality investigation/evaluation projects, including a college building in Cleveland, Ohio, a commercial multi-tenant building in Ft. Washington, PA and additional commercial and residential buildings as well. Mold abatement on major project in Delaware high rise apartment building. Expert report preparation on two Pennsylvania projects involving microbial impacted residences. Principal in charge for large mold abatement projects in apartment complex and food production facilities.

Project Manager or Principal in Charge of numerous asbestos survey and abatement projects, including malls, industrial facilities, and asbestos products manufacturing plants in New Jersey, Pennsylvania, North Carolina, Tennessee and Delaware.

Principal in charge for a \$2.3 million lead abatement project in Philadelphia, at former Defense Research facility being converted for future residential use.

Peer review of IAQ testing program, prior to planned transaction involving major Wilmington, Delaware building damaged by fire.

Completion of Benzene Storage Tank Testing work at Pharmaceutical Plant in Upper Merion Twp., PA.

Senior company person responsible for Health and Safety Plan preparation, training and incident review/resolution.

Project Manager for an electric circuits manufacturing facility closure project in New York. Work included floor and equipment decontamination, pipe and equipment draining and operation of the wastewater treatment system prior to facility auction.

Preparation of expert report on benzene exposure from a service station gasoline release in southeastern PA.

Preparation of air permits and storage tank thickness testing for hazardous waste facilities in Elizabeth, NJ and Lewisberry, Pennsylvania. Work included design of a storage tank venting system to minimize volatile organics and preparing estimates of reduced volatile organic emissions.

Project Manager for an automotive manufacturing facility closure project in Michigan. Work included floor and equipment decontamination in an electroplating processing area where cyanides were used, as well as closure cleanup and grouting of wastewater treatment building pits. Also included were testing of piping systems and equipment and removal and disposal of contaminated air pollution control equipment.

Principal in charge for landfill design and permitting projects in Georgia, Pennsylvania and New Jersey.

Preparation of Specifications, Remedial Plans and Health and Safety Plans for cleanup and waste industry projects in several states.

Design and implementation of soil vapor extraction systems to control volatile organic constituents for several PA projects. Design and Quality Assurance for vapor barriers at volatile organics remediation sites.

Project Manager for numerous landfill gas recovery projects in Pennsylvania and New Jersey. Included recovery testing, permitting and construction QA/QC.

Preparation of Health and Safety Plans for construction activities, investigation, and remediation work at cleanup sites, waste facilities and an abatement projects.

For a Pennsylvania municipality, Mr. Brown completed a combined sewer overflow evaluation. Emergency construction at a CSO overflow point was completed to address a dry weather flow problem after TV sewer inspection revealed no apparent conventional solution to brick arch sewer infiltration. A Borough-wide upgrading program was presented to and approved by the PADEP.

Review of proposed cleanup plans and cost estimates for a confidential Superfund site and providing an opinion on feasibility and effectiveness of the selected cleanup option and on the accuracy of the cost estimates.

Manager for comprehensive upgrading and expansion for a major hazardous waste management facility project in Puerto Rico. Work included design of landfill, surface water management, container storage, tanks storage/treatment and stabilization/ fixation processing facilities. Responsible for the successful completion of all aspects of the engineering portions of the project, which also included regulatory liaison and strategizing, negotiation of Consent Agreements, in-depth Part B permitting, as well as hydrogeological study efforts.

Principal in charge and Project Manager for petroleum release and remediation projects at more than five dozen Pennsylvania and New Jersey sites.

Expert work for Pharmaceutical Company in Upper Merion Township, PA related to onsite landfill methane gas production dispute.

In the Lancaster area, Mr. Brown was retained to assist with a residential sewage spill that resulted in significant damages and illness. The Expert Report focused on the standard of care for sewer cleanout work, which caused the spill, following pipe breakage. Mr. Brown has also prepared an Expert Report on a sewage release affecting a strawberry field in Shaverstown, PA.

Expert witness on cases involving Superfund cost recovery, leachate discharges from a sanitary landfill, landfill siting, transfer station siting and petroleum release responsibility and remedial costs.

For a major regional wastewater treatment facility, Gary Brown completed preparation of a Prevention of Significant Deterioration air permit for a sludge incinerator to the United States Departmental Protection Agency. Work included air modeling, negotiation of issues related to stack height, and careful consideration of downwash conditions, as could potentially affect ambient air quality at the property line. Although PSD permitting had initially been overlooked, the permit was received in time so that sludge incineration operations could start up as soon as the major wastewater treatment plant, 40 million gallons in size, became operational.

Principal in charge for mold investigation and remediation projects in Pennsylvania, Delaware and New Jersey. Included is a Philadelphia project involving a large commercial space. Expert witness assignments as well.

Group leader or participant on projects involving waste water treatment and collection systems troubleshooting, odor control investigation, and preparation of comprehensive operations and maintenance manuals for large plants.

Project Manager for a hazardous waste landfill and stabilization/ fixation processing facility design and permitting project near Buffalo, New York.

Project Manager for a chemical production facility environmental upgrading project in Vineland, New Jersey. Work included analysis of discharge standards appropriateness, design of stormwater collection/tank storage systems, stormwater separation, strategic and logistical permitting assistance, as well as hydrogeological studies.

Engineering Manager for a multi-million dollar project involving upgrading of a major landfill in eastern Pennsylvania. Work included Part B Application preparation, upgrading and closure of hazardous waste landfill section, leachate treatment plant upgrading, and design and permitting of landfill expansions. Responsible for engineering budget of over \$1 million. Work included upgrading of all active site utility systems and upgrading of hazardous waste treatment process interruption. Work was completed on schedule and within budget, even given stringent Consent Agreement deadlines.

Project Manager for landfill excavation/utility extensions near boiler house for Pharmaceutical Company in Upper Merion Twp., PA.

Project Engineer for a major tanks management program project involving analysis of tank upgrading needs at over 20 plants throughout the United States for a Fortune 500 company. Work culminated in preparation of a comprehensive ten-year upgrading program, including cost estimates for corporate decision-making.

For the Atlantic County Utilities Authority, Mr. Brown managed an odor investigation in a problematic portion of a major regional waste water collection

system. Dye tests were run during off hours to determine residence times and force mains, and hydrogen sulfide odor generation was projected based on the residence time found. Also, when detailed inspections were completed of the collection system, one waste water pumping station and collection system was found to be severely overloaded, and anaerobic conditions prevailed throughout the collection system area due to extremely low flow velocities. This area was found to be the prime source of odor problems that the downstream regional pumping station was experiencing. Subsequent phases of the project included design and installation of a scrubber system to further control what remaining odor problems remain. Problems were initially hard to define because of three to ten air change per hour flow rates in the regional wastewater utility pumping station. Issues were resolved through a consent decree with the New Jersey Department of Environmental Protection.

Engineering Manager for a formulation of remedial and upgrading plans at a major Midwest liquid hazardous waste management / deep well injection facility. Work included preparation of lagoon closure and PCB cleanup plans and design, permitting and construction of a major new tank-based treatment and storage facility

Project Manager for a construction inspection project involving replacement of 12 underground storage tanks at 12 northern New Jersey utility facilities.

Project Manager for a northern New Jersey project involving construction of the world's largest solid waste baling facility. Work included design aspects, operations and maintenance manual preparation, as well as construction management during the project closeout phase. Punch list items resolution, including damage to site electrical system and components caused by subcontractor.

Engineering Manager for a New York landfill upgrading and expansion project involving resolution of complex permitting delays.

Development of computerized reporting systems for reporting of major projects' budget, status, scheduling and cost control for construction contracts and consultants.

Project Manager for design of a wood gas-to-energy project in Newburgh, New York. Work included the design of truck unloading and solid fuel storage systems, design of mezzanine structures and foundation in close proximity to operating equipment, investigation and design of utility systems, and tie-ins, which included electrical, water, storm drain, fire sprinkler/alarm, steam, oil, boiler refitting/rewiring and complex control/instrumentation interfacing of vendor-supplied control panels.

Transition Engineering Manager responsible for successful waste transfer of permitting, design and environmental management information for over 50 waste

facilities as a result of a Fortune 500 service company major acquisition. Work included debriefing of management employees, transfer of sensitive information and preparation of comprehensive environmental management summary documents for all facilities. Logistical information transfer was also supervised.

Completion of acquisition feasibility studies for numerous multi-million dollar facility purchases, including itemization and quantification of short and long-term liabilities, and analysis of profitability potentials. Also, completion of numerous industrial facility inspections prior to purchase or foreclosure proceeding.

Project Manager for a \$0.75 million textile mill closure project in northeastern Pennsylvania. Project work included asbestos removal and encapsulation, advanced wastewater treatment plant cleanup, decontamination of buildings and drainage systems, and tank testing and repairs.

PROFESSIONAL AFFILIATIONS

National Brownfields Association
Air and Waste Management Association
American Society for Testing and Materials
American Society of Civil Engineers
Water Resources Association of the Delaware River Basin
Water Environmental Federation
American IAQ Council
American Academy of Forensic Sciences

TRADE AFFILIATIONS

Associated PA Constructors
Montgomery County Industrial Development Corporation
National Association of Demolition Contractors
PA Aggregates and Concrete Association
PA Asphalt Pavement Association
PA Utility Contractors Association
PA Chamber of Business and Industry
TriState Commercial Realtors Alliance

PUBLICATIONS AND ADDRESSES

"Review of State-of-the-Art for Landfills", American Society of Civil Engineers Seminar, March 14, 1978.

"Bioconversion - Gasification of Combined Municipal Solid Waste and Sewage Sludge", NJ Water Pollution Control Association Seminar, March 21, 1979.

"Landfilling Technology in New Jersey: Short and Long Term Impact on Leachate Discharge", NJ Water Pollution Control Association Seminar, September 22, 1981.

"Landfilling Technology", presented at Seminar on the Solid Waste Crisis in the Delaware Valley, January 22, 1985.

"Hazardous Waste Cleanup Costs: Why So Much", Government Institutes Seminar, December 2, 1987, co-authored with Joyce A. Rizzo.

"Superfund Project Management", presented at American Society of Civil Engineers, Geotechnical and Water/Environmental Group, April 24, 1990.

"Managing Engineering Consulting Work", Presented at Seminar, February 5, 1992.

"Pennsylvania Residual Waste Regulations - Facility Design Issues," presented at three Pennsylvania Chamber of Business and Industry Seminars, April, 1992.

"Use of Geobentonite Composite Blankets in Landfill Capping", presented at Seminar, June 1992.

"New Jersey DPCC Regulations", presented at N.J. Environmental Exposition Seminar, October 1992.

"Voluntary Cleanups", presented at Seminar, March 1993.

"Groundwater Recovery and Treatment", presented at New Jersey Environmental Exposition Seminar, October 1993 and Pen Jer Del Seminar, November 1993.

"Groundwater Remediation", Presented at New Jersey Environmental Expo, October, 1993.

"Managing Environmental Construction Work", Presented at Seminar, February 21, 1994.

"Real Estate - Managing Environmental Liabilities", Seminar, August 1994.

"PA Residual Waste Regulations", Seminars, October and November 1994.

"Compliance Audits - Waste Facilities", Institute of Business Law Seminar, May 1995.

"Superfund - The US vs. Atlas Minerals and Chemicals Case", American Bar Association Seminar, September 1995.

"The Pennsylvania Land Recycling Program", Montgomery County Industrial Development Corporation, February 1997.

“Expert Witness Testimony”, Pennsylvania Bar Institute, Environmental Law Forum, March 1997.

“New EPA Air Regulations”, Eastern Technology Council, June 1997.

“Underground Storage Tank Closures”, Pennsylvania Chamber of Business and Industry Seminars, October 1997.

“Advanced Expert Testimony”, Pennsylvania Bar Institute, Environmental Law Forum, March 1998.

“The Effect of Environmental Issues on Market Value”, Assessors Association of Pennsylvania, November 1998.

“The Benefits of Using Engineering Design Logic on Expert Witness Cases”, American Academy of Forensic Sciences, February 1999.

“Environmental Expert Testimony, It’s A Little More Complicated”, PA Bar Institute, Environmental Law Forum, April 1999.

“Expert Testimony, Why it Must be Based on Facts and Sound Technical Judgement”, American Academy of Forensic Sciences Annual Meeting, Reno, NV, February 2000.

“Preparing Expert Reports in Complex Cases”, American Academy of Forensic Sciences Annual Meeting, February 2001.

“Environmental Engineering Standard of Care”, American Academy of Forensic Sciences Annual Meeting, Seattle, WA, February 2001

“Contingency Plans”, MCIDC Seminar, March 2001.

“Act 67/68 - Local Permits Coordination”, MCIDC Seminar, March 2001.

“Proposed DEP Safe Fill Regulations”, APC/PACA/PUCA/PAPA Environmental Seminars, March 2002.

“Advanced Act 2 Issues” - PA Chamber of Business and Industry Environmental Conference, April 2002.

“Environmental Updates - Hot Mix Industry”, PA Asphalt Pavement Association Seminars, May 2002.

“PA Hazardous & Residual Waste Regulations - Practical Compliance Tips” - PA Chamber of Business and Industry Seminars, October 2002.

“Proving a Gasoline Release Source when your Analytical Results are not Favorable”, American Academy of Forensic Sciences Annual Meeting, February 2003.

“MTBE Releases” - American Academy of Forensic Sciences, February 2003.

“Mold Remediation” - MCIDC / TriState Seminar, February, 2003.

“Managing Mold Abatement Projects” - MCIDC Seminar, March 2003.

“DEP Clean Fill Program and RAP General Beneficial Use Permits” - PA Aggregates and Concrete Association and Associated PA Constructors Annual Conferences, November 2003.

“DEP Clean Fill Program and Land Use Policy Update”, PA Chamber of Business and Industry Environmental Conference, April 2004

“Final DEP Fill Policy” - PUCA, PAPA/APC/PACA, Seminars - March and April 2004

“Expert Witness/Mold Consulting,” American Academy of Forensic Sciences, February 2005

“Act 2 Land Recycling Program Updates,” PA Chamber of Business and Industry, April 2005

“Asphalt Hot Mix Industry – Environmental Updates,” PA Asphalt Pavement Association, October 2005

“SPCC Regulation/Contingency Plan Updates”, PA Aggregates & Concrete Association, January 2006

“PA Land Recycling Program Updates”, PA Chamber of Business & Industry, April 2006

“Mold Seminar” – American Academy of Forensic Sciences – February 2008

“Real Estate Environmental Due Diligence Issues”, TriState Realtors Alliance, March 2008

“Pennsylvania Specific Environmental Compliance”, PA Chamber of Business and Industry, Environmental Conference, April 2008

“Clean Fill Issues”, Minnesota Brownfields Conference, April 2008

Delaware Estuary – Science and Environmental Summit, Presentation on “Upgrading of Dredge Spoils Management Facility”, Delaware Estuary Organization, Cape May, New Jersey, January 14, 2009.

Montgomery County Industrial Development Corporation, Environmental Update Seminar, Presentation on “Building Preservation and Mothballing”, Norristown, Pennsylvania, February 4, 2009.

Saul Ewing Environmental Conference – “Soil Vapor/Indoor Air/Webinar”, Berwyn, Pennsylvania, August 13, 2009.

HalfMoon Seminars, “Stormwater Management and Special Sites”, held in New Jersey, New York, Pennsylvania, Delaware, and Maryland 2009-2011.

Pennsylvania Brownfields Conference “Brownfields Site Risk Management”, Harrisburg, Pennsylvania, September 15th 2009.

Pennsylvania of Business Industry Environmental Conference, “Stormwater Management”, Harrisburg, Pennsylvania – April 13, 2010.

Temple University, Class on Environmental Law – “Brownfields, Underground Storage Tanks, Resource Conservation and Recovery Act”, Philadelphia, Pennsylvania, October 20, 2010.

Progressive Business Conferences, “Hazardous Waste Land Ban”, National Teleconference, March 5, 2011.

Pennsylvania Bar Institute Environmental Law Forum, “Stormwater”, Harrisburg, Pennsylvania, April 6, 2011.

Half Moon Seminars – “Stormwater management – An Innovative Look at LIDs and BMP’s.” Harrisburg, PA, April 7, 2011.

Progressive Business Conferences – “Land Disposal Restrictions for Hazardous Waste,” National teleconference, May 5, 2011.

Temple University, “Asbestos and Lead Based Paint,” November 7, 2011.

DMI/Webinar, “Mold in Buildings,” February 8, 2012.

Progressive Business Conferences, “Stormwater Permitting Requirements,” National Teleconference, May 8, 2012.

Half Moon, LLC, “Stormwater Requirements, BMP Approvals and Other Programs,” Cherry Hill, NJ, June 5, 2012.

Pennsylvania Aggregates and Concrete Association, “DEP Update-Reclamation Fill,” Valley Forge, PA, June 20, 2012.

National Society of Municipal Engineers, "Public Right of Way Excavation Guidelines; New Requirements," Edison, NJ, September 12, 2012.
Friends School, "Our Environment", Mullica Hill, NJ, December 10, 2012.

Progressive Business Conferences, "RCRA Record Keeping", National Teleconference, January 18, 2013.

Progressive Business Conference, "Universal Waste Management," National Teleconference, March 5, 2013.

National Asphalt Pavement Association, Work of Asphalt Conference, "Wetlands", "Dust Control", "Stormwater Management", RAP Breakers," San Antonio, TX, March 19, 2013.

PA Asphalt Pavement Association, "Environmental Updates," Harrisburg, PA, March 26, 2013.

PA Bar Institute, "Stormwater and Wet Weather, Harrisburg, PA, April 11, 2013.