STATEMENT OF QUALIFICATIONS

www.EMSonsite.com
#TheEMSDifference
INTRODUCTION

Founded in 2000, Environmental Management Specialists, Inc. (EMS) is a professional environmental services company with strategically located service centers providing coverage across the Midwest, Mid-Atlantic, SouthCentral United States, and beyond.

10 KEY DIFFERENTIATORS:

1. SAFETY. It is at our core. Our comprehensive safety program is deeply-ingrained in the EMS culture and our core values.
2. RESPONSIBLE. Our EMR is 0.64 and we’ve never had a lost time accident in the entire history of the company.
3. CAPABLE. Our employees are extensively-trained and certified (i.e. HAZWOPER, SafeLand, e-RailSafe, API, QQ, and an integrated functional training program to drive best-of-the-best performance).
4. QUALIFIED. EMS is pre-qualified by the contractor screening consortia ISNetworld, CCS, PEC Premier and Avetta.
5. EXTENSIVE EXPERIENCE. EMS is your one-stop-shop for a wide variety of high-quality environmental services.
6. RESPONSIVE. Call us anytime at: (877) 816-9111. We offer 24/7 accessibility through our “One Call” dispatch program.
7. DEDICATED. We provide a single point-of-contact for repeat customers through our “Operations Concierge” program.
8. INTENTIONAL. EMS is deliberate in its continuous company-wide effort to ensure an amazing customer experience on every project through exceptional readiness, execution and documentation.
9. WASTE EXPERTS. We containerize, document, and dispose of waste the right way, every time while providing hassle-free convenience to our customers.
10. OSRO CERTIFIED. EMS is a United States Coast Guard-certified Oil Spill Removal Organization (OSRO #473).

OUR CORE SERVICES:

REMEDIATION
- Hog-and-haul site remediation
- Fueling station cleanup and UST removal
- Gas and vapor barrier installation
- Multi-faceted brownfield remediation
- Wetland, stream and channel restoration
- Sheet Piling
- Landfill remediation
- Hazardous soil and groundwater treatment
- Impoundment pond and lagoon remediation

EMERGENCY RESPONSE
- Railway, pipeline, roadway, and waterway spill response
- OSRO for Facility Response Plans (FRPs)
- 24/7/365 dispatch for emergency service needs
- HAZWOPER Training

SCHEDULED ENVIRONMENTAL SERVICES
- Tank cleaning (API tanks, frac tanks, pits, sumps, OWS, vessels,...)
- Product transfer and temporary storage
- Tank decommissioning and demolition
- Confined Space Entry (CSE) rescue teams
- Line jetting
- Air knitting and hydro-excavation
- CSE training (mobile training vessel)
- Integrated waste management services
- Waste transport and disposal
- Waste characterization and containerization
- Drum waste “milk run”
- Vacuum truck/tanker services
- Roll-off truck services
- Vacuum and roll-off box rental
- RCRA and DOT training
THE HISTORY OF EMS

EMS started in Ohio in November 2000 as a single-employee waste broker aiding environmental consulting firms and contractors with management of hazardous waste. EMS founder Jon Ransom began his career in the environmental industry as a sales representative with Ashland Chemical in 1991. Subsequent positions with environmental service companies in North Carolina added to his knowledge and experience. Family ties brought him back to Ohio in 2000.

Starting out of Jon’s basement, EMS overcame many early challenges typical of startups as the company developed an extensive network of transportation and disposal vendors to broker. In 2006, EMS recruited a core group of remediation professionals and began self-performing remediation projects from start to finish. Through 2009, EMS experienced steady growth expanding to 12 employees and one small warehouse. Throughout this time frame, EMS developed a solid company culture, a strong balance sheet, and a quality reputation in the industry, thereby establishing the foundation for future growth.

EMS hit its stride in the second half of 2009 and quickly accelerated both its pace of improvement and growth. At the center of this growth initiative were several Best of the Best (BOB) professionals who joined EMS and formed the nucleus of the EMS Leadership Team. From here, the Leadership Team launched an intense drive to grow EMS through continuous improvement and the development of people and processes. From 2009 to 2011, EMS became the #1 ranked remediation contractor in Ohio, and rated among the best remediation contractors in the nation. At the same time, EMS began an initiative to diversify its capabilities to include emergency response, tank and utility services, and waste services.

In 2013, EMS committed to developing a comprehensive Strategic Plan. This plan, which is updated annually, serves as a guiding document to maintain a sustainable competitive advantage. By investing in training, equipment, and facilities, EMS has solidified its reputation as a high-quality provider of environmental, industrial, and energy services across an expanding operating area. Transformative events included: designation as an Oil Spill Removal Organization (OSRO) by the U.S. Coast Guard; approval by multiple contractor screen consortiums; and execution of master service agreements with numerous Fortune 500 companies in the oil and gas, utility, transportation, and manufacturing industries.

Today, EMS has grown to more than 175 employees, with operation centers in Cleveland, Chattanooga, Chicago, Cincinnati, Columbus, Indianapolis, Philadelphia, Pittsburgh, Steubenville, Toledo, and Zanesville. Far beyond its early days as a waste broker, EMS now provides full-service emergency spill response, oilfield services, environmental services, waste transportation, site remediation, and tank management services.

MISSION STATEMENT

EMS is a quality-driven, value-added environmental contractor with a deep commitment to providing what our customers need, when they need it, with a guarantee of safety, preparedness, and communication at the center of every relationship.

We have an intense drive to succeed, with each incremental improvement bringing us closer to our potential. We compare ourselves not to any competitor but rather to the progress of our step-by-step pursuit of excellence. Our reputation as the best-of-the-best is our most valued asset, and we are determined to maintain and build on that reputation.

We maintain a consistent focus on sustainable, profitable growth, with the understanding that building a great company is achieved by recruiting and retaining great people who thrive on teamwork. We have a fundamental belief in doing right by our employees, as well as our customers, and we take great care to cultivate a meaningful and enjoyable workplace for the environmental industry’s best of the best where they are challenged, appreciated, supported and empowered to maximize the value delivered to our customers.

SAFETY is at the heart of our EMS core values:

CORE VALUES

At EMS, our core values are more than words – more than what we wish others would think of us. Our core values are what we expect from ourselves and hence what others should expect and demand of us. They shape every strategic decision we make as a company, and they are a guide to daily decisions made by each and every person at EMS.

Simplicity

Attitude

Focus

Excellence

Truth

Yes – “Can do!”

Awards | Recognition

EMERGENCY RESPONSE PREFFERED PROVIDER PROGRAM

2017 CONTRACTOR AWARD

RECOGNITION

“EMS provides priority service to CSX with a focus on incident in the State of Ohio area. A special thanks for handling the Marysville Bio-Haz Project on Thanksgiving Day. The EMS Onsite Project Managers consistently provide timely and accurate communications with updates. EMS continues to manage intermodal projects in full compliance with the CSX remediation procedures and response requirements. EMS also continues to work efficiently and effectively with a focus on project time-management and safety first with CSX.” – CSX Team

WHO IS EMS?

Inc. Magazine’s annual exclusive list of America’s fastest-growing private companies — the Inc. 500 | 5000

EMS is proud to announce our inclusion on the 2016 Inc. 5000 List of America’s Fastest-Growing Companies. Even more impressive, this is our 6th appearance on the Inc. 5000 list since 2009. This year, we rank at #3320 overall and #24 among all environmental services companies on the list.

We’re grateful to our 150 dedicated employees; our many valued clients who trust us with their environmental projects every day; and for the vision of EMS’s leadership, who continue to guide our tremendous growth and the continuous improvement that drives it.

Environmental Management Specialists, Inc.

Environmental Management Specialists, Inc.
SAFETY

EMS considers the safety of our employees and customers the most important aspect of our operations. EMS has never had an OSHA violation or a lost-time accident in the history of the company. EMS maintains a BWC Experience Modification Rating (EMR) of 0.64. All EMS personnel receive extensive training, including 40-hour HAZWOPER, annual eight-hour HAZWOPER refresher, RCRA, DOT, confined space entry, respiratory protection, first aid/CPR and associated industry-specific and customer-specific training programs.

SAFETY PROGRAM HIGHLIGHTS:
• Our EMR is 0.71 and we’ve never had a lost-time accident in the entire history of the company.
• Top quartile Total Recordable Incidence Rate (TRIR) performance for NAICS Code 562910.
• Comprehensive, independently-reviewed corporate health and safety plan.

KEY SAFETY PRACTICES:
• Daily Job Safety Analysis on all projects.
• Quarterly all-employee safety meetings.
• Weekly safety performance reporting to corporate leadership team.
• Short-Service Employee Program.
• Regular, documented jobsite and facility safety audits.
• Enhanced incident reporting protocol, including near-miss reporting.
• Full root-cause investigation of all reported incidents and near-misses, including documentation of corrective measures.
• Safety performance included in all employee performance evaluations.

HAZWOPER TRAINING:
All EMS personnel performing duties involving hazardous waste and emergency response receive extensive training, including 40-hour initial HAZWOPER, annual eight-hour HAZWOPER refresher, RCRA, DOT, confined space entry, respiratory protection, first aid/CPR and assorted industry-specific and customer-specific training programs. Our training includes both classroom and hands-on activities, and covers all of the topics outlined in OSHA regulations.

ADVANCED RAIL CAR SPECIALIST TRAINING:
Several EMS personnel are certified by the Emergency Response Training Center (ERTC) in Pueblo, Colorado as Advanced Rail Car Specialist (ARCS). ARCS training is a comprehensive four-day haz-mat emergency training course covering all facets of haz-mal response.

TANK CAR SPECIALIST (TCS) TRAINING:
Several EMS personnel are Tank Car Specialists (TCS-A) trained and certified. TCS training covers the technical skills and knowledge necessary for effectively managing a haz-mal/WMD incident in a rail transportation emergency. Participants respond to railcar emergencies and incidents while functioning within a designated emergency response team. Situations involve scenario-based emergencies related to rail transport of a variety of commodities.

API TANK ENTRY SUPERVISOR (TES) TRAINING:
Several EMS personnel are Tank Entry Supervisors (TES) certified. The API-TES certification program is designed to train participants as having the minimum knowledge, experience, and skills needed to safely perform duties required by tank entry supervisors.

SAFELAND TRAINING:
A large percentage of EMS field personnel receive SafeLand training and certification. SafeLandUSA is an organization of independent oil and gas operating companies with the purpose of developing standardized safety orientation with minimum requirements for the U.S. onshore E&P industry.

CONFINED SPACE ENTRY (CSE) TRAINING:
Confined spaces, no matter how common in construction and general industries, are inherently hazardous and not meant for continuous occupancy. To fully understand the health and safety risks of entering and working in confined spaces, workers are required to take confined space entry training in compliance with OSHA requirements.

CSE RESCUE TRAINING:
EMS ensures that our confined space rescue team members will be proficient in the basic skills needed to safely and efficiently perform entry rescues in the workplace, including assessment of confined space hazards; atmospheric monitoring; confined space rescue equipment use and limitations; knots; vertical and horizontal hauling/lowering systems; and personal protective equipment.

WHAT OUR CLIENTS HAVE TO SAY...
“It is very important that our contractors follow strict regulatory guidelines and provide professional and quick service, which we get every time from EMS. I feel at ease knowing the EMS team is a phone call away to help ensure the safety of all involved.”
– Environmental Manager, The Ohio State University.
In order to develop and maintain our reputation as a best-in-class contractor in each of the markets we serve, EMS and our personnel maintain a wide assortment of certifications, from regulatory training and industry-specific training, to qualifications with government agencies, safety consortiums and regulatory boards. As our customers continue to increase the safety and certification qualifications required of their contractor, EMS is committed to meeting and exceeding those requirements. Along with the various safety training certifications noted on the previous page, EMS also maintains the following certifications and credentials:

**OIL SPILL REMOVAL ORGANIZATION (OSRO) CERTIFICATION**
EMS maintains a Class V OSRO Classification throughout its operating area. In response to the regulatory requirements established by the Oil Pollution Act of 1990 (OPA90), the OSRO classification process was developed to facilitate the preparation of vessel and facility response plans.

U.S. COAST GUARD OSRO #473
B.O.A. HSCG84-13-A-G00005

The OSRO Classification process provides standard guidelines by which the Coast Guard and plan developers can evaluate an OSRO’s potential to respond to and recover oil spills of various sizes. Classifications are based upon minimum equipment amounts and response time standards outlined in the Coast Guard’s OSRO Classification Guidelines.

**ISNETWORLD, AVETTA, CCS, AND PEC PREMIER CERTIFICATION**
EMS is an approved contractor for ISNetworld (ISN), Avetta, CCS, and PEC Premier. These contractor screening consortiums connect corporations with safe, reliable contractors in capital-intensive industries. They collect ongoing conformance information from contractors/suppliers, verify its accuracy, and report the results to owners and clients.

**E-RAILSAFE CERTIFICATION**
A large percentage of EMS field personnel receive e-RAILSAFE certifications. The purpose of the e-RAILSAFE program is to improve the security of railroad employees, operations and facilities. As part of these efforts, designated railroad contractors are required to comply with the program, which includes:
- Personnel screening;
- Compliance awareness and testing; and,
- Workplace credentialing.

**TRANSPORTATION WORKER IDENTIFICATION CREDENTIALING (TWIC)**
Several EMS field personnel are credentialed through the TWIC program. This program is a Transportation Security Administration and U.S. Coast Guard security threat assessment initiative that provides tamper-resistant biometric credentials to maritime workers requiring un-escorted access to secure areas regulated under the Maritime Transportation Security Act of 2002.

**UNDERGROUND STORAGE TANK REMOVAL CERTIFICATION**
EMS personnel maintain underground storage tank removal certifications in multiple states.
THE EMS DIFFERENCE

24-HOUR DISPATCH
EMS maintains a “one call” dispatch operation with on-call EMS personnel available 24 hours a day, 7 days a week, 365 days a year.

ONE CALL
(877) 816-9111

STRATEGIC PLANNING
EMS conducts a formal strategic planning process, which is updated annually, in order to leverage our strengths and maintain alignment throughout our various growth initiatives. Wide participation across all business groups leads to a collaborative planning process and results in a broad commitment to achieving our common goals.

INSURANCE
EMS maintains substantial insurance coverage, including general liability, pollution liability, professional liability and automobile liability insurance. Our insurance certificate can be provided for detailed coverage information.

BONDING
EMS maintains aggregate bonding capacity in excess of $20 million.

INTEGRITY
Instead of taking the easy route and ending up with negative long-term consequences, we step to the plate and deal with difficult issues in an honest and upfront manner. We are committed to being fair and reasonable. We take our reputation very seriously, and we recognize that everything we do has an impact on our reputation.

EXPERIENCE AND EXPERTISE
The extensive training, experience, and expertise of our personnel enables us to recognize and respond to a wide variety of challenges faced by our customers. EMS has a proven record of service excellence, as demonstrated by a commitment to exceeding the expectations of our customers.

COMMUNICATION
Throughout our organization, we maintain a constant focus on clear, accurate, and consistent communication – both within EMS and especially with our customers. EMS conducts a quarterly meeting with all employees which focuses on training, enhanced internal communication strategies, and teamwork. These meetings are designed to encourage and educate our employees, and are an essential part of our effort to maintain a culture of effective communication throughout our organization.

PROFESSIONALISM
All EMS personnel are skilled in their area of expertise and also receive extensive ongoing training to maintain those skills. From the appearance and attitude of our personnel to the quality of our documentation and record-keeping, our professionalism is always on display.

RESPONSIVENESS
EMS is dedicated to providing the highest level of service and is focused first and foremost on the needs of our customers.

What our clients have to say...

“I have had the opportunity to work with many environmental contractors throughout the Midwest for the past 25 years on brownfield remediation, petroleum, and RCRA cleanup projects. I have found that EMS differentiates itself by providing innovative solutions to complex remediation projects by working with us in a collaborative nature. We have found EMS to be efficient, cost-effective, and willing to address unforeseen issues in a timely manner.”
– Principal, Regional environmental consulting firm

“I have worked with EMS for more than five years. I have used them to do disposal of waste, underground storage tank (UST) removals, remediation activities and emergency responses. They are professional, client-oriented, knowledgeable of regulatory requirements, and cost-conscious. I am completely satisfied with their performance, and I have recommended them to other consultants and clients.”
– Project Manager, Regional environmental consulting firm

By developing and maintaining strong personal relationships with our customers, we are able to fully understand their needs and execute the work accordingly. To succeed in a highly competitive market, it is critical that we provide high-quality services in a cost-effective manner. The expectations of our customers determine the minimum performance standards by which we measure our success. Whether we are solving a customer problem or providing routine services, we always strive to provide the most value for the dollar and bring all work to completion to the customer’s full satisfaction.

“In all cases, EMS has provided professional, courteous service at competitive prices. Their personnel are highly-motivated and display an attention to detail that is rarely experienced with other contractors.”
– Project Manager, Regional environmental consulting firm

“Working with EMS provides peace of mind that communications on operations are expedient, accurate, and concise, which is crucial for EHS Professionals. The work performed by EMS is professional, complete, and done right the first time. I would recommend that any company in need of waste management, remediation, or industrial cleaning team up with EMS for these services.”
– EHS Specialist, Fortune 500 oil & gas producer

“EMS equipment, crew, and general work ethic are a cut above any contractor we have had complete work here. We will absolutely be using your company again for future work.”
– Plant Manager, Steel manufacturing facility

Environmental Management Specialists, Inc.
Like any company, EMS is a collection of individuals. These individuals are the reason EMS has developed an extensive list of capabilities and a quality reputation in the environmental industry.

We take great pride in the diversity of expertise, depth of experience, and quality of character in our personnel.

Please refer to the following professional biographies of our key personnel for additional details about the people who make EMS who we are today.

What our clients have to say...

“They’re on site, not just on the phone. They really know every detail about us and our facilities. I can ask them anything about technical issues and regulations and they have the answer. Their reporting is excellent – it’s automatic, and it saves me valuable time.”

– Environmental Coordinator, Fortune 500 Company, Manufacturing Facility

Jon Ransom has more than 20 years of experience managing site remediation, unknown waste identification and characterization, soil treatment, waste transport and disposal, and lab packing projects. He has worked in sales, project management, cost estimating, site supervision, project accounting, and leadership team functions.

EDUCATION
Bachelor of Science, Muskingum College, 1991 Summa Cum Laude

TRAINING AND CERTIFICATIONS
Advanced Project Management
Advanced RCRA Hazardous Waste Management
DOT HazMat Transportation
OSHA 40-hour HAZWOPER
OSHA Annual 8-hour Refresher
Advanced First Aid/CPR (American Red Cross)
Applied Strategic Planning
Leadership Development

Tim Acric has more than 20 years of experience providing services for the oil and gas industry, emergency response, site remediation, demolition, construction and earth-moving projects. He has served as a field technician, site supervisor, project scientist, project manager, division manager and now Chief Operating Officer.

EDUCATION
Bachelor of Science, Environmental Science, Trinity College, 2000

TRAINING AND CERTIFICATIONS
OSHA 40-hour HAZWOPER
OSHA Annual 8-hour Refresher
Advanced First Aid/CPR (American Red Cross)
RCRA Hazardous Waste Management
DOT Hazardous Material
Confined Space Entry – Supervisor
Confined Space Entry Rescue – Team Member
Current Medical Surveillance Documentation
Fit-Tested for Respirator Use
80-hour Project Manager (Earth Tech, Inc.)
Safety, Compliance Management and Function Specific (unpacker)
Applied Borehole Geophysics (NGWA sanctioned)
Remediation and Monitoring Well Rehabilitation
80-hour Environmental Law and Liability (U.S. Navy)
Seabee Combat Warfare Specialist (U.S. Navy)
Surface Warfare Specialist (U.S. Navy)
Damage Control Repair Locker Leader (U.S. Navy)
Bill Dennis has more than 15 years of experience on large-scale site characterization and remediation projects, brownfield redevelopments, facility demolitions, hazardous material management, oil and gas industry services, and construction management. He has served in roles ranging from hydrogeologist to senior project manager on multiple large-scale remediation and redevelopment projects subject to joint federal and state regulation.

**EDUCATION**
Master of Science, Geology & Geophysics, University of Missouri-Rolla, 1999, Chancellor’s Fellow
Bachelor of Science, Geology, Youngstown State University, 1996, Summa Cum Laude

**TRAINING AND CERTIFICATIONS**
- OSHA 40-hour HAZWOPER
- OSHA Annual 8-hour Refreshers
- SafelandUSA/PEC Basic Orientation
- Unconventional Business Unit Safety (Hess)
- Contractor Safety (Range Resources)
- Contractor Safety (Rice Energy)
- Smith System DriverDirect On Road Defensive Driving
- ATA Dangerous Good Regulations
- DOT General Awareness Safety
- Fit-Tested for Respirator Use
- Advanced First Aid/CPFR (American Red Cross)

Levi Cordle has more than 15 years of experience in oil and gas field services, emergency response, industrial services, and remediation projects. He has served in roles ranging from field technician, heavy equipment operator, site supervisor, on-scene coordinator, project manager, estimator, DOT/PUCO compliance officer, and health and safety officer.

**EDUCATION**
Associates of Business, Ohio University, in progress

**TRAINING AND CERTIFICATIONS**
- OSHA 40-hour HAZWOPER
- OSHA Annual 8-hour Refresher
- OSHA Annual 8-hour Refresher – Supervisor
- RCRA Hazardous Waste Management
- DOT Hazardous Material
- Confined Space Entry Rescue – Team Member
- Current Medical Surveillance Documentation
- Fit-Tested for Respirator Use
- Advanced First Aid/CPFR (American Red Cross)
- Excavation/Trenching Competent Person
- Heavy Equipment, Operations/Rescue
- Tanker Roll-over, Transfer and Recovery
- Rail Car Competent Person
- Coast Guard, Shoreline Assessment/Clean-up
- Boom Deployment, Fast Water
- Weapons of Mass Destruction Awareness
- SafelandUSA/PEC Basic Orientation
- Contractor Safety/Down Line Awareness (AEP)

Chris Curtis has over 29 years of diverse environmental industry experience specific to remediation, industrial, railroad, and emergency response projects. He has served in roles as a project manager, project superintendent, and regional manager.

**EDUCATION**
Bachelor of Science, Construction Technology, Purdue University

**TRAINING AND CERTIFICATIONS**
- OSHA 40-hour HAZWOPER
- OSHA Annual 8-hour Refresher
- OSHA Annual 8-hour Refresher – Supervisor
- RCRA Trenching and Excavating
- OSHA Confined Space
- OSHA Site Safety Officer
- Advanced First Aid/CPFR (American Red Cross)
- CSX Roadway Worker Protection
- E-RAILSAFE Certification
Randy Thomson has over 35 years of experience in the petroleum industry as a transport driver, oilfield gauger, operations technician, oilfield foreman, terminal manager, pipe line area manager, supervisor, regulatory compliance supervisor, region VP, compliance VP, and operations VP. Randy has experience in numerous areas including, PHMSA compliance, EPA compliance, OSHA compliance with VPP certification, USCG Marine Environmental Response and Preparedness, DOL compliance, Pipe line operations, and Petroleum terminal operations.

**EDUCATION**

Masters, Management, Oakland City University
Bachelors of Science, Management, Upper Iowa University

**TRAINING AND CERTIFICATIONS**

OSHA Hazwoper (24 hour)
OSHA General Industry Safety and Health (OSHA 10)
RC 14001 RCMS Lead Auditor
Texas A&M Oil Spill Control
TapRooT - Root Cause Analysis

**JOHN EHRNFELT, PE**

Vice President, Remediation Services

John Ehrnfelt has worked on a wide variety of environmental, remediation, and civil projects including industrial site cleanups, brownfield redevelopments, soil and groundwater treatment, waste management, stormwater management, landfill construction, and demolition. He has performed site assessments, remedial design, project management and estimating for several large remediation projects. John also has strong regulatory program experience, including working with the Ohio Voluntary Action Program, RCRA, and CERCLA.

**EDUCATION**

Bachelor of Science, Civil and Environmental Engineering, Cleveland State University, 2006
Professional Engineer (P.E.)

**TRAINING AND CERTIFICATIONS**

OSHA 40-hour HAZWOPER
OSHA Annual 8-hour Refreshers
Professional Engineer (P.E.), State of Ohio
Advanced First Aid/CPR (American Red Cross)

**BRYAN MARTIN, Senior Director of Quality Assurance**

Bryan Martin has worked extensively in environmental operations, remediation and emergency response operations. During his more than 30 years in this industry, he has worked in sales, project management, cost estimating, site supervision, project accounting, and leadership team functions.

**TRAINING AND CERTIFICATIONS**

10 hour OSHA
40-hour Hazardous Materials, Tank Car Specialist Training
8 Hour Hazwoper Supervisor
Advanced High Angle Rope Rescue Supervisor
American Red Cross CPR/First Aid/AED Certification
Bloodborne Pathogens Certificate
Boom deployment, fast water
CDL – Class A w/ tanker endorsement
Confined Space Supervisor
Current medical surveillance documentation
DOT Haz Material Management & Trans Training
FEMA Nat’l Incident Management / Command System
180 hour Certified Firefighter
Fit Tested for Respirator Use
Hazard Communication Training
Hazardous Materials & WMD Operations
Hazardous Materials Highway Tank Car Specialist
Licensed Boat Operator
Railroad Operations Training
TWIC / Transportation Security Administration Approved
Fire Prevention Awareness
Vacuum Truck Operations
Fall Protection Safety Training

**JIM HAWKINS**

Director of Operations, Remediation Services

Jim Hawkins has more than 20 years of experience in the environmental services industry as an equipment operator, foreman, and field superintendent. Jim has developed expertise in haz-mat response (petroleum, volatiles, metals, PCBs); on-site project infrastructure excavation, transportation and disposal of contaminated soils; dredging and dewatering PCB soils, water, and sludge; landfill closure, drainage and sediment-levée and earth dam construction, stabilization/solidification and erosion control; manufactured gas plant remediation; wetlands construction/restoration; excavation, transportation and disposal of contaminated soil and confined space entry.

**EDUCATION**

Three Rivers High School, Three Rivers, MI
Equipment Operator “A” school, U.S. Navy

**TRAINING AND CERTIFICATIONS**

OSHA 40-hour HAZWOPER
OSHA Annual 8-hour Refreshers
OSHA 10-hour Safety
Confined Space Entry
Confined Space Entry Rescue
Teamwork Communication – I, II
Navy Leadership
Advanced First Aid/CPR (American Red Cross)
Excavation/Trenching Competent Person
MSHA
Transportation Worker Identification Credential (TWIC)

**RANDY THOMSON**

Director, Environmental, Health & Safety and Compliance

Randy Thomson has over 35 years of experience in the petroleum industry as a transport driver, oilfield gauger, operations technician, oilfield foreman, terminal manager, pipe line area manager, supervisor, regulatory compliance supervisor, region VP, compliance VP, and operations VP. Randy has experience in numerous areas including, PHMSA compliance, EPA compliance, OSHA compliance with VPP certification, USCG Marine Environmental Response and Preparedness, DOL compliance, Pipe line operations, and Petroleum terminal operations.

**EDUCATION**

Masters, Management, Oakland City University
Bachelors of Science, Management, Upper Iowa University

**TRAINING AND CERTIFICATIONS**

OSHA Hazwoper (24 hour)
OSHA General Industry Safety and Health (OSHA 10)
RC 14001 RCMS Lead Auditor
Texas A&M Oil Spill Control
TapRooT - Root Cause Analysis
Kara Allison directs corporate development strategies and communications for EMS. Kara’s niche expertise is a unique blend of her previous 20 years of experience as a nationally-recognized environmental consultant, a media relations coordinator for the Ohio Environmental Protection Agency, and a former newspaper reporter. An expert in business and project development, state and federal environmental policy issues, reputation management, community outreach, media strategy, and crisis communications, Kara builds credibility with clients, legislators, government officials, municipalities, community groups, and reporters by helping them understand the various environmental issues associated with projects.

EDUCATION
Bachelor of Arts, Journalism, Politics & Government, Humanities & Classics, Ohio Wesleyan University, 1995

TRAINING AND CERTIFICATIONS
Accredited in Public Relations (APR) NIMS P5S and ICS-100 (FEMA) Public Relations Society of America (PRSA) PRSA, Central Ohio Chapter PRSSA Professional Advisor, Marietta College MSEA Board of Directors Manufacturing Alliance of Communities Ohio Economic Development Association, Brownfields Subcommittee Ohio Women in Government Commercial Real Estate Women, Greater Cincinnati Registered Lobbyist, State of Ohio Colonel, The Honorable Order of Kentucky Colonels

Bruce Markey has more than 25 years of environmental experience in business development and developing client relationships in the public and private sector. Bruce has managed over 35 brownfield projects under the VAP, CORF and JobsOhio programs in Ohio involving site remediation, demolition, industrial cleaning, waste management, landfill capping, environmental construction, and vapor intrusion. Bruce is a certified applicator and inspector for various vapor barrier systems. Bruce is also a Licensed Professional Geologist.

EDUCATION
Bachelor of Science, Geology, Indiana University, 1979

TRAINING AND CERTIFICATIONS
Licensed Professional Geologist – Indiana (IN 1157) Certified Liquid Boot Inspector OSHA 40-hour HAZWOPER OSHA Annual 8-hour Refresher OSHA Annual 8-hour Refresher – Supervisor Confined Space Entry LPS Behavior-based Safety Training Current Medical Surveillance Documentation Fit-Tested for Respirator Use Advanced First Aid/CPR (American Red Cross)

Marc Brenner is an environmental expert in operations, supervision, management, and account development. Marc specializes in Emergency Response Services, Mold Remediation, and Indoor Air Quality Services. During his 20 plus years of industry experience, including his military service, Marc has served as a regional manager, project manager, estimator, operations manager, business leader, and director of emergency services.

EDUCATION
Bachelors of Science, Environmental Services, Trinity College, 2000

TRAINING AND CERTIFICATIONS
OSHA 8-hour Refresher Course OSHA 40-hour Hazwoper Training OSHA Supervisor Training OSHA Confined Space Entry OSHA Bloodborne Pathogen First Aid/CPR Certified Mold Remediator Mold Inspector Environmental Inspector Air Quality Specialist

Marc Ruff has worked extensively on environmental cleanup and stream restoration contracting. During his 23 years of industry experience Jason has served as a field technician, site supervisor, project manager, senior project manager, general manager and Co-founder and president.

EDUCATION
Ohio State University, 1993-1995 Hocking College, 1992-1993

TRAINING AND CERTIFICATIONS

Jason Ruff has worked extensively on environmental cleanup and stream restoration contracting. During his 23 years of industry experience Jason has served as a field technician, site supervisor, project manager, senior project manager, general manager and Co-founder and president.

EDUCATION
Ohio State University, 1993-1995 Hocking College, 1992-1993

TRAINING AND CERTIFICATIONS

Jason Ruff
Program Manager

Marc Brenner
Program Manager

Bruce Markey, LPG
Director, Construction Development

JASON
RUFF
Program Manager

KARA
ALLISON, APR
Vice President, Sales & Marketing

BRUCE
MARKEY, LPG
Director, Construction Development

7 8

MARC
BRENNER
Program Manager

17

18

Environmental Management Specialists, Inc.
ENVIRONMENTAL SERVICES DIVISION

VACUUM TRUCK SERVICES
EMS owns and operates a fleet of wet and dry vacuum trucks to remove liquids, sludges and/or solids from a wide variety of sites. Our super sucker vacuum trucks can transport waste directly to appropriate disposal facilities or transfer waste to vacuum boxes, frac tanks, or other containers for temporary storage on-site or off-site at an EMS service center.

EMS vacuum trucks also provide various onsite services including vacuum enhanced recovery (dual phase extraction), product transfers, dewatering and support for various industrial service, emergency response, and storage tank management needs.

TANK AND PIT CLEANING
EMS has thoroughly trained technicians and owns the equipment required to enter and clean various-sized tanks and pits to remove all kinds of liquids, sludges, solids, and debris. All EMS employees are confined space entry trained and have experience cleaning even the most difficult-to-clean spaces while safely managing a wide variety of hazardous conditions.

OILFIELD SERVICES
From tank cleaning to emergency response, and super sucker vacuum trucks, EMS provides a wide range of services to the oil and gas industry, including:
- Emergency response (frac-outs, spills, etc.)
- Tank cleaning
- Mud pit cleaning
- Rig washing
- Super sucker vacuum truck services
- Waste containers (roll-off/vac boxes)
- Air knifing (pipeline excavation)
- Equipment decontamination
- Roll-off trucking

PRESSURE WASHING
EMS performs a variety of pressure washing services. Our portable fleet consists of units that range from 3,000 psi to 10,000 psi and includes both cold and hot pressure washing capabilities, which can be coupled with the use of environmentally friendly degreasers and detergents to clean oils, lubricants, greases and fats. We also provide field equipment designed to provide self-contained water to clean areas that have limited water availability.

EMERGENCY RESPONSE
EMS has highly-trained people and state-of-the-art equipment ready and prepared to respond to a broad range of environmental emergencies, including releases at transportation facilities, industrial facilities, utilities, and energy facilities. We also manage releases on roadways, railways, pipelines and waterways including lakes, rivers and tributaries.

Our extensive land and water resource capabilities include:
- Abandoned wastes
- Damaged goods
- Derelicts
- Leaking containers
- Leaking transformers
- Natural disasters
- Pipeline releases
- Roadside spills
- Waterway releases

At EMS, we manage spills from start-to-finish with various processes, including:
- Establishment of secondary containment for leaking containers
- Containment booms and sorbent media, booms, and pads
- Recovering and transferring of product
- Protection of sensitive areas
- Prevention of spilled product migration
- Installation and maintenance of siphon dams
- Waste characterization
- Transportation and disposal of contaminated soils, materials, and wastes
- Site restoration to pre-spill conditions
- Thorough post-cleanup documentation

HYDRO-EXCAVATION
Unlike traditional mechanical excavation, there is little chance of damage or disruption to critical underground utilities when pressure washing and high-power vacuuming are utilized to excavate. Hydro-exca...
angles, while preserving natural surroundings. Hydro-exavcation equipment is directed at the desired excavation point while the soil slurry is vacuumed into a vacuum truck to be contained and/or transported off-site.

AIR KNIFING

Similar to hydro-exavcation (without the water), air knifing utilizes high velocity air to penetrate, expand, and break up soil. The soil is then removed from the area using a powerful vacuum. Air knifing (aka potholing or daylighting) includes all of the advantages of hydro-exavcation. In addition, air knifing results in dry soil waste, which typically reduces disposal costs compared to the slurry produced through hydro-exavcation. Typical air knife applications include:

- Surgical excavation around known or suspected utilities
- Pre-drilling location clearance
- Underground utility location verification
- Underground piping and conduit repairs
- Rehabilitation/desilting of small diameter injection wells

WASTE CHARACTERIZATION AND REMOVAL

EMS provides all aspects of waste management, including lab packing, waste identification, characterization, containerization, transportation, and treatment and disposal. EMS offers recycling, treatment, and disposal alternatives for all types of hazardous and non-hazardous waste in bulk as well as drum quantities. EMS strives to provide customers with same-day, competitive price quotations as well as fast-track waste approval and shipment.

Customers rely on EMS to handle all kinds of RCRA hazardous waste, TSCA regulated waste, and non-hazardous waste.

EMS customers have the assurance that their waste materials are managed in strict accordance with all laws and regulations. The EMS system of environmental care starts at the generator’s site with waste characterization and continues through the receipt and processing of the materials at the disposal facility. EMS personnel are experts at determining the most economical and environmentally-sound destination for each waste stream, and also assist customers with cost-saving alternatives related to waste generating processes, treatment options, and material packaging.

CONFINED SPACE RESCUE TEAMS

When it comes to worker rescue, there are two types: non-entry and industrial entry teams. In most cases, non-entry rescue is preferred. But for many confined space rescue situations – which are often complex and dangerous – entry rescue teams are the only option.

Unlike non-entry rescue, which often can be performed by the entry attendant with minimal training, emergency service teams have more in-depth training and use specialized equipment to save the worker trapped in the confined space.

EMS has thoroughly-trained entry rescue teams and the specialty equipment required to support our clients in the event of a confined space rescue.

TRAINING SERVICES

Our EMS trainers are industry experts straight from the field with extensive hands-on experience in a wide variety of EMS disciplines. This experience enables our uniquely-qualified trainers to put safety procedures into context and use real-world scenarios to explain the “how to” in the classroom. EMS training is about more than checking boxes. We focus on helping trainees learn and truly understand what to do, how to do it, and why it needs to be done. Doing so leaves a lasting impact and leads to safety in action. EMS is your ONE CALL for:

- 40-Hour HAZWOPER
- 24-Hour HAZWOPER
- 8-Hour HAZWOPER Refresher
- Confined Space Entry (CSE)
- Confined Space Rescue (CSR)
- DOT Hazardous Materials
- ICAO/IATA Hazardous Materials
- IMO/IMDG Dangerous Goods
- Lockout Tag Out
- PEC Safeland
- Personal Protective Equipment
- RCRA Hazardous Waste
- Respiratory Protection (with Fit Testing)
- First Aid/CPR/AED (can be offered as part of 40-hour, 24-hour, and CSR)

Environmental Management Specialists, Inc.
Former Automotive Stamping Plant – Waste and Industrial Services – Hilliard, OH
EMS provided characterization and removal of various hazardous and non-hazardous waste containers in addition to bulk waste removal and confined space industrial cleaning. EMS removed approximately 250,000 gallons of oil and water from two oil water separators and five press pits, and pressure washed all surfaces utilizing 5,000 psi hot pressure wash units. EMS safety protocols required the implementation of lockout/tagout procedures, confined space procedures, and continuous air monitoring throughout the work.

Railroad Locomotive Terminal – Emergency Response – Indianapolis, IN
EMS responded to a large gasoline spill at a locomotive terminal in Indianapolis. The cause of the spill was a leaking petroleum pipeline that ran through the terminal. Approximately 100,000 gallons of gasoline was discharged to a drainage ditch located on the property which in turn discharged to a retention basin. EMS mobilized 3 supervisors, 6 operators and 5 technicians to the project site from 4 different EMS locations along with 5 service trucks, 3 vacuum trucks, and assorted PPE, pads, pillows and boom. EMS crews worked around the clock (12-hour shifts) and through the weekend for five days vacuuming gasoline from the retention pond and the drainage ditch. After the bulk liquid was removed from the affected areas, EMS transitioned to air knifing, hand digging, and heavy equipment operation to remediate the impacted soils. Over 4,000 tons of impacted soil, as well as 500,000 gallons of water and product, was removed and transported for off-site disposal.

Storm Damage (37 Transformer Spill Sites) – Emergency Response – Southern Ohio
As a result of a severe windstorm, EMS responded to multiple locations where transformers had released PCB and non-PCB oils. Several EMS crews with proper personal protective equipment (PPE) worked for seven days following the storm to complete site cleanup, waste management and thorough site documentation for a total of 37 spill sites. The high volume of work, rapid response time requirements, and remote location of many of the sites presented unique challenges. EMS overcame these challenges while also addressing all commitments associated with daily EMS operations. Nothing less than extraordinary effort by our supervisors and crews enabled EMS to succeed in this emergency response. All 37 sites were granted NPA (No Further Action) status and were closed out in accordance with applicable regulatory requirements.

Train Derailment – Emergency Response – Northern Ohio
EMS responded to a train derailment with the release of 13,000 gallons of flammable liquid. EMS mobilized a multidisciplinary crew to complete installation and provide 24-hour product recovery services. EMS simultaneously assisted in delineating the extent of the spill through precision test-pitting, including air knife excavation near a major fiber optic line. EMS also conducted extensive confined space entry work, examining on-site subterranean structures for spill-related waste. After establishing the limits of the spill, EMS assisted in the design of remediation technologies to mitigate off-site migration and consequently completed the installation of approximately 500 linear feet of sheet piling to prevent product from impacting a nearby marsh. Following the initial response, EMS was retained to provide daily product recovery support and waste transportation services while assisting with additional exploratory excavation, temporary water treatment system installation, and site maintenance. In total, EMS mobilized two incident commanders, two project managers, six supervisors, 11 operators, 15 technicians, seven vacuum trucks, three roll-off trucks, two air tancers with compressors, and 12 service trucks, in addition to 6 more pieces of heavy equipment, 10 carbon vessels and four fully-equipped project trailers.

Tank Cleaning at Major Storage Facility – Industrial Services – Cincinnati, OH
EMS was awarded a contract by a major utility to provide cleaning and disposal services for hydrostatic testing projects in Northern Kentucky. Responsibilities included providing emergency response spill support, including vacuum truck services and spill containment/response measures; storage of pipeline cleaning solutions and rinse water; analysis, permitting and field coordination to allow for disposal of hydrostatic test water to the local sanitary sewer system; analysis, treatment and disposal of cleaning solutions and rinse water at an approved facility; overall environmental project management; and site safety. Additional roles taken on during these projects included providing erosion and sediment controls for disturbed areas in accordance with the SWPPP plan; providing roll off containers and disposal of pipeline pigging materials; providing PCB characterization of natural gas condensates and scrap piping; providing cleaning and disposal services for hydrostatic testing frac tanks; and providing asbestos abatement of coal tar coatings and gaskets encountered on the pipelines and ancillary equipment during the course of the project.

Hydrostatic Testing Projects – Environmental Services and Emergency Response – Northern Kentucky
EMS was contracted to provide frac tank cleaning, pit cleaning and vacuum truck services for multiple drill pads across Eastern Ohio and Western Pennsylvania. During rig skids or moves, EMS crews utilized hot pressure washer units and vacuum trucks to clean sludge and mud from frac tanks and pits, often under extreme weather conditions. Responsiveness, a strong work ethic, quality equipment and detailed record-keeping have been recognized by this producer as key EMS differentiators.

Tank and Pit Cleaning for Shale Gas Drill and Completion Pads – Industrial Services – Eastern Ohio and Western Pennsylvania
EMS was contracted to provide frac tank cleaning, pit cleaning and vacuum truck services for multiple drill pads across Eastern Ohio and Western Pennsylvania. As a result of a severe windstorm, EMS responded to a large gasoline spill at a locomotive terminal in Indianapolis. The cause of the spill was a leaking petroleum pipeline that ran through the terminal. Approximately 100,000 gallons of gasoline was discharged to a drainage ditch located on the property which in turn discharged to a retention basin. EMS mobilized 3 supervisors, 6 operators and 5 technicians to the project site from 4 different EMS locations along with 5 service trucks, 3 vacuum trucks, and assorted PPE, pads, pillows and boom. EMS crews worked around the clock (12-hour shifts) and through the weekend for five days vacuuming gasoline from the retention pond and the drainage ditch. After the bulk liquid was removed from the affected areas, EMS transitioned to air knifing, hand digging, and heavy equipment operation to remediate the impacted soils. Over 4,000 tons of impacted soil, as well as 500,000 gallons of water and product, was removed and transported for off-site disposal.

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Solildification Services for Shale Gas Drill Pads – Industrial Services – Eastern Ohio
EMS was contracted to provide 24-hour on-site solidification services for multiple drill pads. Operator/supervisors were assigned to shale gas drill pads, where they employed the use of excavators to mix drill cuttings and related process fluids with power ash to solidify the waste in preparation for disposal. Operators were responsible for continuously solidifying and loading out waste to enable the drilling operations to flow seamlessly. Additionally, operators assisted with other rig duties as requested.

...and more projects of varying size and complexity.
REMEDIATION SERVICES DIVISION

SITE REMEDIATION
EMS provides a diverse range of remediation services including:
- Multi-faceted remediation
- Hog-and-haul site remediation
- MGP site remediation
- Hazardous soil and groundwater treatment
- In-situ remediation system installation
- Gas and vapor barrier installation
- Sheet piling
- Impoundment pond and lagoon remediation
- Fueling station cleanup and UST removal
- Wetland, stream and channel restoration

EMS supplies top-quality field crews and equipment on each and every project site. Our equipment operators and hazardous material technicians have extensive and diverse project experience, and are well-respected in the environmental industry. We own a large assortment of equipment and also have ongoing contracts with several equipment suppliers throughout our operating area to support our project needs.

TRANSPORTATION AND DISPOSAL OF CONTAMINATED SOIL AND WATER
EMS has completed hundreds of projects involving excavation of contaminated soil for off-site disposal. We’ve utilized dozens of disposal facilities for hazardous waste soil, non-hazardous soil, and soils meeting regulatory guidelines for beneficial reuse. EMS maintains ongoing relationships with numerous disposal and recycling companies and is familiar with their capabilities and approval requirements to ensure a smooth and efficient working relationship from the initial approval process through final documentation receipt.

EMS also has extensive experience with management of contaminated water. When contaminated water is encountered on a site, EMS has a wide variety of equipment to pump, filter, and containerize the water for characterization treatment, discharge, or off-site disposal.

Backfill supply and placement is a key element of any site remediation project involving the removal of contaminated soil. EMS personnel have broad civil construction experience and are knowledgeable about industry standards, means and methods required to achieve proper geotechnical placement, and compaction of backfill. With our extensive regional supplier and vendor relationships, EMS is able to provide specified backfill at a cost-effective price for any project.

MGP SITE CLEANUP
EMS is an experienced manufactured gas plant (MGP) site remediation contractor with expertise managing the unique challenges and specific regulatory issues that apply to these sites. We are familiar with various cleanup and disposal alternatives associated with MGP sites, and EMS personnel are accustomed to the special subsurface conditions typical to MGP sites.

HAZARDOUS SOIL AND GROUNDWATER TREATMENT
As part of our pledge to be “more than a contractor,” EMS strives to provide innovative approaches to meeting cleanup goals by the most economical means and methods possible. EMS has specialized expertise with several in-situ remediation technologies with an emphasis on safety, cost reduction, performance, and ease of use.

In-situ treatment of contaminated soil and groundwater can be achieved by various means and methods. Injection is a viable and effective process on many sites, especially for groundwater. The soil treatment method preferred by EMS involves in-situ mixing with excavation equipment and specialty mixing attachments. Because the contamination is treated directly within the impacted area (“in-situ”) prior to generation of a waste, this method is especially beneficial when addressing contamination levels in excess of hazardous waste standards.

When comparing in-situ mixing and treatment of soil to more traditional “hug and haul” methods of hazardous waste remediation, in-situ treatment achieves three simultaneous key objectives:
1. It significantly reduces overall project costs.
2. It is fast-acting.
3. It prevents the generation of hazardous waste.

EMS utilizes various in-situ remediation technologies when addressing soil and groundwater contamination, including the following:
- In-situ chemical oxidation (ISCO)
- Metals stabilization/fixation
- Enhanced aerobic biodegradation
- Enhanced reductive dechlorination

IN-SITU REMEDIATION SYSTEM INSTALLATION
EMS has extensive experience with the construction and installation of in-situ remediation systems, including soil vapor extraction (SVE), air sparge, and pump & treat systems. EMS will procure the system components, construct the system, and install associated trenches, piping and wells per the system specifications.

GAS AND VAPOR BARRIER INSTALLATION
Impermeable membranes are an ideal use on brownfields or other contaminated sites as an engineering control for pollution containment. As a certified installer of various types of gas and vapor barrier systems, EMS can provide installation and design assistance to complete these complex projects.

EMS installs a variety of seamless cold spray applied, water-based, and VOC-free membranes and venting systems which provide a barrier against vapor intrusion into structures on brownfields or other environmentally impaired sites. EMS also installs various 2-part odorless, VOC-free vapor intrusion coating systems that consist of:
- VOC-free vapor intrusion coating systems which consist of:
of chemically resistant materials to protect existing floor slabs and structures from the threat of contaminant vapor intrusion.

**WETLAND, STREAM, AND CHANNEL RESTORATION**

EMS specializes in working collaboratively with consultants to implement design-build plans that improve the condition of wetlands, streams, channels, and other natural systems. The EMS team is qualified to restore degraded streams and wetlands to systems with enhanced fish and wildlife habitat, increased stability, diverse riparian corridors, and improved water quality. We are well-versed in deploying a broad range of construction techniques and measures in ecologically-sensitive systems, while working within the regulatory parameters for these specialized restoration projects.

**SHEET PILING**

EMS provides installation of sheet piling in various configurations and site conditions. Using a vibratory drive head attached to a 35-metric-ton excavator, EMS has installed thousands of feet of steel sheeting, as well as HDPE sheeting, to prevent migration of contaminants of concern (COCs). EMS provides this service as a component of our site remediation capabilities, as well as a containment measure during large emergency response incidents.

**IMPOUNDMENT POND AND LAGOON REMEDIATION**

EMS is experienced with various means and methods for dewatering and solidifying sediment and sludge. EMS has a variety of equipment with which to effectively manage small to large-scale dewatering and solidification projects.

**STORAGE TANK REMOVAL**

EMS provides comprehensive tank removal, decommissioning, and demolition services across our operating area.

With several certified personnel on staff, EMS provides turn-key removal services for various sizes of aboveground storage tanks (ASTs) and underground storage tanks (USTs), including the following:
- Permitting and inspection
- Product removal and tank cleaning
- Tank decommissioning and demolition
- Tank system removal
- UST closure-in-place
- Contaminated soil removal
- Site restoration

**BROWNFIELD DEMOLITION**

Because a large percentage of brownfield cleanup projects involve a combination of demolition and site remediation, EMS has expanded our capabilities to include demolition services. By hiring qualified and experienced personnel and investing in specialized demolition equipment, EMS is able to provide turn-key demolition services along with our core remediation capabilities.

Not only is EMS able to reduce costs for our customers by self-performing both demolition and remediation work, but we are also better able to manage quality control and provide an exceptional level of project reporting and documentation.

On large sites with complex demolition needs, EMS often teams with strategic partners in the demolition industry. Combining resources and expertise on large-scale brownfield projects has proven to be the safest, most economical, and most efficient approach to many of our projects.

We have a tremendous safety record, expertise in various disciplines, a proven track record and extensive project management experience on complex, high-profile redevelopment sites. Our project execution and documentation in this arena are second to none.

**LANDFILL REMEDIATION**

EMS specializes in landfill capping, repairs, closures, and cell expansions, including:
- Geo-composite liner (GCL), HDPE liner, and cap construction
- Leachate collection piping
- Limited new cell expansion

**SITE RESTORATION**

Many of our equipment operators and site supervisors have extensive civil construction experience. As such, EMS is able to provide a seamless transition from remediation to restoration of the project site. Site restoration services provided by EMS include:
- Clearing and mulching
- Earthwork and grading (GPS accuracy and laser-grade quality)
- Excavation
- Backfilling
- Paving
- Revegetation
- Stream and wetland restoration
- Geo-composite lining (GCL)
- Lease and access road construction
- Water and sewer line construction
REMEDIATION CASE STUDIES

Former Manufactured Gas Plant (MGP) Facility – Site Remediation – Marion, OH
The objective of this project was to remove all soils impacted as a result of historic gas manufacturing activities on this 1.06-acre site, while protecting utilities in the work area and the health and safety of site workers and residents in the surrounding neighborhood. EMS removed a total of 19,000 tons of contaminated soils, placed 10,000 cubic yards of backfill, and placed topsoil and seed across the site. This project was completed on time and under budget despite exceptionally wet weather and related challenges associated with backfill placement and compaction.

Former Automotive Manufacturer – Gas Vapor Barrier – Columbus, OH
Due to the site history and compliance standards required under the Ohio Voluntary Action Program (VAP), approximately 240,000 square feet of 60-mil gas vapor barrier was installed as part of a passive vent system designed to mitigate potential residual vapors and meet residential indoor air standards. In total, EMS installed more than 16,000 linear feet of 2-inch diameter vent pipe and more than 240,000 square feet of 60-mil LiquidBooth® liner.

Former Dry Cleaner – Site Remediation – Lyndhurst, OH
On an especially expedited schedule, EMS worked closely with the environmental consultant to characterize and classify contaminated soil in several identified areas across the site into five distinct disposal categories. EMS excavated and disposed of 7,000 tons of non-hazardous soil, 700 tons of hazardous waste soil for treatment or direct landfill, and 388,000 pounds of hazardous waste soil for incineration. Due to the close proximity to neighboring properties, EMS utilized vapor suppression foam during certain phases of the project.

In conjunction with soil removal activities, EMS placed more than 7,700 tons of engineered fill across the site with construction-grade compaction. EMS also removed 200 tons of subsurface concrete structures and 10,000 gallons of contaminated groundwater. In addition, EMS conducted air knitting in the right-of-way in order to remove contaminated soil while protecting underground utilities in the area. This $1 million Clean Ohio Revitalization Fund project was completed by EMS on schedule (23 working days from start to finish), under budget, and to the complete satisfaction of the environmental consultant and property developer.

Commercial Property Development – Site Remediation and In-situ Soil Treatment – Zanesville, OH
In accordance with a Rule 13 permit and the Ohio EPA Voluntary Action Program, EMS mobilized to this former manufacturing facility and removed 38,000 tons of soil contaminated with petroleum and heavy metals. Of that total, 3,000 tons of soil contained lead in excess of hazardous waste standards. EMS stabilized this contaminated soil in place (in-situ), which in turn delivered significant savings compared to costs that would have been associated with off-site disposal as hazardous waste.

Former Landfill – Wetland Construction – Steubenville, OH
EMS was contracted to construct two bioremediation wetlands for the treatment of leachate seeps from a former landfill. A total of 3.5 acres of area was cleared to provide for the installation of two separate wetland features. Erosion and water filtration controls were installed to maintain water quality standards. The wetland areas were constructed in conjunction with existing streams. Excavation of 3,000 cubic yards of unusable soils and overburden was required prior to initial grading of the areas. EMS imported, placed, and compacted a total of 4,500 cubic yards of soil to build the required berms and basin areas. Following the grading process, the basin then was lined with a welded 40-mil geomembrane liner and covered with native soils excavated from other areas on the site. The wetlands were then planted with native wetland plant material for the filtration of the seep water prior to discharge through an engineered drainage system. All adjacent areas were restored with native grass species.

Former Automotive Manufacturer – Site Remediation and Tank Removal – Baltimore, MD
EMS was contracted to remove eight USTs, five oil/water separators and 200 tons of petroleum-contaminated soil from the project site. The projected two-week project was completed in six days. EMS delivered a 25 percent savings to the customer compared to bids received from local contractors from the Baltimore area. EMS remediated during a subsequent phase of the project to excavate and remove 2,000 tons of lead-contaminated hazardous waste soil. EMS completed this soil remediation on schedule and under budget.

Superfund Site – Site Remediation and Landfill Cap – Joliet, IL
EMS conducted in-situ stabilization of 10,000 tons of lead-contaminated soil at the site. After being treated to below regulatory standards, the soil was then excavated and transported to a non-hazardous waste landfill. We then imported thousands of tons of clay and graded the site to specifications developed by the environmental consulting firm in preparation for installation of a landfill cap. EMS then installed the landfill cap and liner, as well as all associated engineered gas vents. One notable obstacle on this project was the unusually large amount of rainfall encountered at the job site during construction. EMS worked through these challenges and the project was completed to the consultant’s complete satisfaction.

Former Industrial Property – Remediation System Installation and In-situ Soil Treatment – Canton, OH
EMS successfully installed air sparge, soil vapor extraction (SVE), and groundwater hydraulic barrier in-situ remediation systems according to the specifications; removed perchloroethylene (PCE)-contaminated soil to the point of compliance; backfilled all excavations with construction-grade compaction; and restored all surface features across this challenging former industrial site. This project included removal of 7,320 tons of soil with non-hazardous PCE concentrations at two areas of the site. EMS was able to complete the remediation of all surface areas of the property in less than two months. This project included the removal and on-site treatment of 2,360 tons of soil with initial PCE concentrations above the hazardous waste standard. As part of a chemical oxidation treatment designed for the site, chemicals were mixed in-situ with the contaminated soil with initial PCE concentrations above the hazardous waste standard. Mixing took place in lifts using an excavator and mixing attachments. Mixing operations were conducted in various levels of personal protective equipment (PPE) from Level D PPE to Level B PPE. Vapor suppressing foam was utilized as needed based on air monitoring in order to prevent any impact on neighboring properties.

Former Industrial Facility – Site Remediation and Demolition – Cleveland, OH
EMS was contracted to provide removal and disposal of all asbestos, including removal and disposal of asbestos-containing materials on the site. EMS was able to identify, containerize, transport, and dispose of a wide variety of hazardous wastes inside the former industrial facility. Immediately following demolition, EMS mobilized to remove 99,000 gallons of petroleum-contaminated water from three 20,000-gallon USTs and on site. EMS was able to excavate, crush, and removed the four USTS from the site under the direction of our in-house certified tank installer. Prior to removal of soil, lab analysis indicated elevated levels of PCBs in the soil. In total, 1,300 tons of soil were excavated, crushed and removed from the four USTS from the site under the direction of our in-house certified tank installer. Prior to removal of soil, lab analysis indicated elevated levels of PCBs in the soil. In total, 1,300 tons of soil were excavated, crushed and removed from the four USTS from the site under the direction of our in-house certified tank installer. Prior to removal of soil, lab analysis indicated elevated levels of PCBs in the soil. In total, 1,300 tons of soil were excavated, crushed and removed from the four USTS from the site under the direction of our in-house certified tank installer. Prior to removal of soil, lab analysis indicated elevated levels of PCBs in the soil. In total, 1,300 tons of soil were excavated, crushed and removed from the four USTS from the site under the direction of our in-house certified tank installer. Prior to removal of soil, lab analysis indicated elevated levels of PCBs in the soil. In total, 1,300 tons of soil were excavated, crushed and removed from the four USTS from the site under the direction of our in-house certified tank installer.
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<thead>
<tr>
<th>Location</th>
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<tbody>
<tr>
<td>CLEVELAND</td>
<td>HEADQUARTERS &amp; SERVICE CENTER</td>
<td>440.816.1107</td>
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<tr>
<td></td>
<td>6909 ENGLE ROAD, SUITE C-31</td>
<td></td>
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<td></td>
<td>CLEVELAND, OH 44130</td>
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<tr>
<td>CHATTANOOGA</td>
<td>CHATTANOOGA, TN 37406</td>
<td>865.333.0384</td>
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<tr>
<td>CHICAGO</td>
<td>1949 NORTH WOODLAWN AVENUE</td>
<td>219.314.0367</td>
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<td>GRIFFITH, IN 46319</td>
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<tr>
<td>CINCINNATI</td>
<td>1001 2ND AVENUE</td>
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