PROFESSIONAL PROFILE

Joseph Midwig, PE, LSRP

Principal Engineer

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402 Heron Drive
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EDUCATION
BS, Environmental Engineering, Drexel University

PROFESSIONAL LICENSES
Professional Engineer in New Jersey, Pennsylvania, and Maryland
Licensed Site Remediation Professional in New Jersey

EXPERIENCE SUMMARY
Twelve years' experience: Principal Engineer, Senior Engineer, Project Engineer, Staff Engineer, Staff Assistant Engineer, and Field Technician Intern with Roux; Water Treatment Intern with Aqua Pennsylvania; Field Technician Intern with Engineering Consulting Services; Field Laborer & Supervisor with Midwig's Kleen-A-Lot.

TECHNICAL SPECIALTIES
Design, permitting, implementation and management related to the investigation and remediation of contaminated soil, sediment, groundwater, and air. Remediation designs have incorporated conventional and innovative technologies to address a wide array of contaminants in various media. Specific remedial approaches include pneumatic fracturing for injection of sand proppant, chemicals and nutrients, soil vapor extraction, in-situ bioremediation, in-situ chemical oxidation, and excavation utilizing multiple approaches and structural support systems. Preparation of reports, design drawings, specifications, contract documents, cost projections, and remedial options analysis related to environmental site assessments, remedial investigations, and remedial actions at Brownfield redevelopment, Industrial, Petroleum, Public Sector, and other commercial sites. Design, permitting, implementation, and management related to engineered stormwater management systems. Conducted state-led investigative and remedial activities under NJDEP and PADEP among others. Conducted USEPA-led investigations under the jurisdiction of RCRA, CERCLA, and TSCA.

REPRESENTATIVE PROJECTS

- Senior engineering support for the ongoing investigation and remediation of a multi-million-gallon release of petroleum hydrocarbon product from a former refinery and petroleum storage terminal in northern New Jersey. The project is under LSRP oversight, and Mr. Midwig contributed to bringing the project into compliance with NJDEP regulatory/mandatory deadlines by assisting in the development of a comprehensive remedial strategy. Includes the optimization of extensive, existing total fluid and LNAPL skimmer systems, vapor mitigation systems and hydraulic groundwater containment systems which overall led to the removal of obsolete infrastructure and reduction in long term O&M costs. Activities also included the investigation and remedial planning for hexavalent chromium impacts in operational and non-operational areas, evaluation of petroleum recovery IRMs and planning for transition to long-term remedial actions, remedial action permit modification and preparation of biennial certifications, and investigation of LNAPL and vapor intrusion for off-site properties. Provide regulatory/strategic planning including interpretation of regulatory timeframe and permit requirements and determining the required path/schedule to meet these goals.

- Project management, design, and implementation for a full site remediation of gasoline constituents via dissolved oxygen, bacteria, and nutrient recirculation in overburden soils and bedrock in preparation for site redevelopment. Pneumatic fracturing and sand proppant emplacements were used in order to increase the hydraulic conductivity within the overburden soils. The remediation was designed to address the saturated soil and groundwater at the Site, which was impacted primarily with gasoline from former gas station underground storage tanks (USTs). The unsaturated soil was addressed via excavation to 16 feet. The remediation was implemented under the NJDEP's Site Remediation Program. Specific responsibilities included developing the remedial approach, design, and implementation of the injection and extraction well network; permitting; reporting; gaining approval from the LSRP; system troubleshooting and routine O&M; and progress monitoring of dissolved-phase constituents in groundwater.

- Project Manager for an active bus storage and maintenance garage in Camden where investigation and remediation are ongoing. The investigation included soil and groundwater sampling associated with a benzene, toluene, ethylbenzene, and xylene (BTEX) release from several previously removed USTs. In addition, chlorinated solvents, specifically trichloroethene (TCE), were also delineated in soil and groundwater that were associated with a historical surface release. Roux Associates designed, constructed and operated a soil vapor extraction (SVE) that successfully remediated TCE concentrations in the unsaturated soil of the source area to below the NJDEP standards. Monitored natural attenuation (MNA) was approved for the VOCs detected in groundwater. A Classification Exception Area (CEA) was submitted for the Site. A VI investigation was performed which included indoor air sampling within the office building and near slab soil gas sampling adjacent to an off-site building which documented there was no VI issue.
- Senior engineer and lead project manager tasked to design a pilot study and full-site remediation of gasoline constituents via dissolved oxygen bacteria and nutrient recirculation system in the overburden soils at Branch Brook Park in Newark, NJ. Evaluated the efficiency of the existing activated carbon soil vapor extraction system and capabilities of the on-site wastewater treatment system. Manage the maintenance and operation of the soil vapor extraction system, which included monthly site visits to replace/repair damaged parts as well as optimize the system via real time observations. Completed the design for a transition from an activated carbon soil vapor extraction/wastewater treatment plant to an in-situ biological recirculation system utilizing similar infrastructure with an overall objective of remediating dissolved phase constituents from groundwater.
- Senior engineer and lead project manager in charge of directing preliminary assessment, site investigation, remedial investigation, and remedial action of various contaminants in the soil and groundwater at a former iron work facility that involved conversion of pig-iron to wrought iron in Dover, New Jersey. The release or discharge of an unspecified material was reported to NJDEP after discovering crushed and partially buried drums. The groundwater at the site is impacted with chlorinated VOCs and soil is impacted with VOCs, SVOCs and PCBs. Pursuant to Mega Rule or Final PCB Rule (40 CFR 761.61), the PCB impacted soils above 100 ppm were addressed under Performance Based Remediation (i.e., soil excavation and off-site disposal) followed by implementation of Self Implementing Plan to address PCB impacted soils below 100 ppm, which involved a variety of excavations and capping to meet TSCA high and low occupancy use requirements.
- Senior engineer and project manager of an active asphalt refining/marine terminal facility in Paulsboro, New Jersey. Responsibilities include: the investigation of contaminated media to determine the extent and magnitude as a result of various releases from historic and current operations; design and implementation of a LNAPL and dissolved phase groundwater remediation system; implementation of an active LNAPL recovery program; regulatory reporting and permitting; and troubleshooting the operation of the on-site wastewater treatment plant.
- Provided engineering design and general project management support for the installation and operation of a total fluids recovery system for the release of petroleum hydrocarbons in the form of LNAPL and dissolved phase groundwater contamination at a petroleum terminal facility in Southern New Jersey. Provided engineering design support and installation of the pilot scale and full-scale systems which included a product storage tank, pneumatic submersible pumps within recovery wells in vaults, contained air supply system and programmable electronic panel.
- Project management, design and implementation for total fluid and LNAPL skimmer recovery systems and active manual LNAPL recovery events at numerous active and former transportation bus and rail terminals. Specific tasks included project team coordination, engineering design of various remediation systems, regulatory reporting, data collection sampling and analysis, investigation and modification of exiting remedial system infrastructure to enhance efficiency, and management of routine O&M activities for the LNAPL, dissolved phase groundwater and soil vapor extraction systems.
- Senior engineer and project manager for a dry cleaner site Cherry Hill, New Jersey. This project involves soil and vapor intrusion investigation activities, development of site-specific impact to groundwater standards, groundwater investigation, and installation and operation of a vapor intrusion mitigation system. With regard to soil investigation, Roux Associates used the SESOIL impact to groundwater model to develop site specific impact to groundwater standards, which substantially reduced overall soil investigation costs. Based on the soil investigation and SESOIL model findings, a groundwater investigation was subsequently implemented and is in progress. This project also involved a vapor intrusion investigation consisting of sub-slab soil gas sampling and indoor air sampling. The indoor air sampling showed that the indoor air exceedances were due, at least in part, to ambient conditions and not solely due to vapor intrusion. A plan was then developed and implemented to eliminate the ambient conditions which successfully reduced the vapor intrusion issue to a “Vapor Concern” condition rather than an “Immediate Environmental Concern” condition. Based on the vapor

concern condition, a sub-slab depressurization system was installed which successfully mitigated the vapor intrusion pathway. Planned remediation includes capping of soil by existing buildings and paving, monitored natural attenuation for groundwater, and institution of a Deed Notice for soil and a CEA for groundwater.

- Stormwater and process water investigation and design for active secondary metals refining facility in Pennsylvania. Activities include investigation of existing, aging sewer system to determine flows and outlets, feasibility study to evaluate cost-effective stormwater and process water remedies and BMPs and prepare document to satisfy obligation under a USEPA Consent Decree.
- Stormwater investigation, design and permitting for active 300-acre petroleum refinery in Pennsylvania. Review existing infrastructure and BMPs in order to evaluate effectiveness at meeting NPDES permit limits set by PADEP. Generate a feasibility study to evaluate cost-effective stormwater remedies and BMPs. Prepared a stormwater management plan for PADEP which met sustainability goals of the client and permit requirements.
- Provide technical permitting support for client in Buena, New Jersey as it relates to the discharge of process water into the groundwater via NJPDES permit. Constructed and submitted the permit with all associated with attachments to the NJDEP.
- Senior engineer and lead project manager tasked to design a 1,300 LF underground stormwater exfiltration system at a 129,000 SF commercial site in Miami, Florida. Engineering services included evaluation of the existing, dated stormwater system to identify failures, evaluation of various stormwater system enhancement options, calculation of storage capacities of various alternative systems, cost-benefit analyses for each improvement, design of a site-specific stormwater system, and compiling all necessary federal, state and local permits for implementation.
- Provide technical engineering support for a high-profile regulatory takings case against the State of New Jersey. Assisted in the preparation of an extensive expert report that addressed irreversible losses associated with flooding, wetland fill, habitat destruction, impacts to threatened/endangered species, migratory birds, saltwater intrusion, nonpoint source pollution, and mitigation. Performed regulatory evaluation of NJDEP permits (CAFRA, Freshwater Wetlands, Flood Hazard Area and Waterfront Development) that would be required under various development scenarios. Additionally, reviewed and responded to various expert reports and supplements submitted by other parties.
- Stormwater and wastewater management, monitoring and sampling at a large asphalt refinery facility in Southern New Jersey. Management activities include ensuring facility compliance with NJPDES permit as well as multiple state and local permits; design sampling protocol for stormwater/wastewater sampling events; coordination of sampling crew for sample collection prior to discharges from NJPDES-permitted outfalls; and providing support to minimize conditions that could lead to permit exceedances. Assisted with upgrading the facilities Discharge, Prevention, Containment and Countermeasure (DPCC) plan which included conducting engineering calculations for permeability evaluations for numerous containments under various storm conditions.
- Stormwater investigation and design for active commercial shipping sites in Pennsylvania and Maryland. Activities include the evaluation of the existing conditions to target areas requiring stormwater enhancements, calculating peak stormwater volumes for various storm frequencies under current site conditions, and preparing a preliminary engineering design for improvements to the stormwater system. Coordination with local and state regulatory agencies to ensure agreement with proposed engineered modifications.
- Provide technical engineering support and project management for enhancing an existing network of underground stormwater conveyance systems at an active train terminal in Kearny, New Jersey. Engineering services included constructing a design for retrofitting the existing stormwater system network to withstand substantial flooding due to storm surges, evaluation of effectiveness of various stormwater remedies and BMPs, construct cost estimate for preferred strategies, and identify lead times and implementation schedule for modifications.
- Provide technical engineering support for a litigation case for a site involving impacts of hazardous polychlorinated biphenyls (PCBs) and non-hazardous lead concentrations in the soil and groundwater associated with a historical industrial manufacturing facility located outside Pittsburgh, Pennsylvania. Responsibilities included: documenting and cataloging historical remedial actions; tabulating soil quantities between hazardous and non-hazardous soil; evaluation validity of remedial measures; and assisting in generating a technical expert report for deposition.
- Provided construction management, project management and engineering support for numerous claims associated with fuel oil USTs at residential and commercial properties. Responsibilities included tank removal, soil and groundwater contamination investigation, site inspections, project set up, monitoring well installation, monitoring well abandonment, enhanced fluid recovery events, groundwater sampling and

analysis, and remedial system trouble shooting and O&M. Office tasks include project management, communication, report writing, permitting and project coordination.

- Develop of a Remedial Investigation Report and Remedial Action Work Plan to delineate and remediate elevated cadmium and lead concentrations in the soil and groundwater immediately adjacent to a sensitive receptor for a former button manufacturing facility in Villas, New Jersey. Remedial investigation activities involved: review of historic remedial documentation and sampling results to determine the nature and extent of the contamination and groundwater plume; identification of sensitive ecological receptors and pathways; calculating soil concentration utilizing technical attainment guidances; and general reporting. Remedial action activities included compiling disposal documentation for excavation of contaminated soils and documenting excavation extents as it pertained to delineated soil exceedances.
- Senior engineer and lead project manager tasked to design an excavation layout for PCB-contaminated soils for a manufacturing facility in East Plainfield, New Jersey. Remediation involved collecting and analyzing soil samples to the delineation of PCBs in multiple areas of concern, design and implementation of an excavation plan, restoration of site features with certified clean fill, and report preparation with objective of establishing a restricted deed notice.
- Provided engineering design and general project management support for the installation of a soil vapor extraction system at a former dry cleaner in Marlboro, New Jersey. Calculated vacuum measurements of site soils beneath the building, losses in head due to pipe distances and temperature drops through the system. Based on the calculations, an appropriate blower was sized for the system in order to efficiently remove chlorinated solvents from underneath the building. Effluent concentrations were formulated to determine validity of an air permit. Constructed SVE unit to satisfy regulatory requirements as well as tenant request for sound and vibration deformation.
- In charge of project teams and budgets for up to 15 projects at a time totaling over $750K in revenue annually. Involved in the development of proposals for future projects. Worked with other engineers in making design decisions
- Coordination of data compilation and summary table preparation using Word and Excel software on numerous projects. Preparing site-specific electronic data deliverables (EDD) for submission to the NJDEP.
- Project team member for various soil, groundwater and vapor delineations and remediation in New Jersey and Pennsylvania. Activities include logging soils from Geoprobe or split spoon sampler, soil and groundwater sampling, installation of temporary well points, coordinating locations for soil and groundwater sampling, and soil gas and indoor vapor sampling events using Suma canisters for vapor collection.
- Conducted monitoring well gauging, purging and sampling using conventional purge, low-flow purge and bailer methods in accordance with NJDEP's Field Sampling Procedures Manual at over 50 different sites.
- Properly sampled monitoring wells, surface water bodies and soils and provided documentation utilized in Biennial Certification reports for various sites.

PROFESSIONAL TRAININGS

Engineering in Training in Delaware

LPS Training®

40-Hour Health and Safety Training, OSHA

Transportation Worker Identification Credential (TWIC)

Contractor Safety Training Basic Orientation, Delaware Valley Safety Counsel

CPI Operations LLC Site Specific Training, Delaware Valley Safety Counsel

PROFESSIONAL AFFILIATIONS

Licensed Site Remediation Professional Association

Brownfield Coalition of the Northeast

American Society of Civil Engineers

American Water Works Association

PUBLICATIONS

Innovative Treatment of Hexavalent Chromium in Alkaline Industrial Waste, BATTELLE 13th International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Denver, Colorado, June 2024.