Karah Conklin, P.E.
Consultant

Education and Credentials

M.E., Environmental Engineering, Cornell University, Ithaca, New York, 2011

B.S., Environmental Engineering, Cornell University, Ithaca, New York, 2010

Professional Engineer, Colorado (License No. 52763), New Mexico (License No. 24525), New York (License No. 096493-1), Utah (License No. 10551398-2202), Virginia (License No. 0402058863)

Continuing Education and Training

OSHA Hazardous Waste Operations and Emergency Response 40-Hour Certification (2011; refreshers 2012 through 2018)

OSHA Construction Safety Training 10-Hour Certification (2015)

Transportation Worker Identification Credential (Expires 2020)

First Aid and CPR Certification (2017)

SafelandUSA Basic Orientation Training (2017)

Professional Affiliations

Member of International Phytotechnology Society

Member of International Erosion Control Association

Member of Society of Wetland Scientists

Professional Profile

Ms. Karah Conklin is an engineer and project manager with 8 years of experience in environmental consulting, focusing on natural remediation technologies, ecological engineering, and ecosystem restoration and management services. She has managed a wide range of projects involving brownfield redevelopment, industrial facilities, municipalities, and insurance claims, and is experienced in remediation design and implementation, stormwater management and modeling, ecological enhancement and restoration, NPDES permitting, U.S. Army Corps of Engineers wetland permitting, project and personnel management, and subcontractor management.

Ms. Conklin specializes in sustainable engineering technologies, including constructed treatment wetlands, living shoreline stabilization, phytotechnologies, stormwater management and treatment, and vegetative landfill capping, as well as ecological services, including wetland restoration and permitting, wildlife surveys, sustainable forest management, habitat certification, and invasive species management.

Relevant Experience

Environmental Investigation, Remediation, and Management

Residential Lead Impact Assessment, Los Angeles, California—Logistics coordinator for the rapid remedial assessment of 500 residential properties for lead impacts in soil from a former battery recycling facility. Responsible for mobilizing and managing more than 60 staff on 16 field teams during sampling. Our assessment included surface and shallow soil sampling and field analysis for lead and other heavy metals utilizing X-ray fluorescence technology.

Coal Bed Methane Surface Discharge Compliance, Trinidad, Colorado—Provided NPDES compliance and permitting support for coal bed methane produced water surface discharge. Presented technical testimony to the Colorado Water Quality Control Commission regarding relevant stream standard changes and technical challenges for meeting stream standards.

Surface Water Quality Sampling for Drinking Water Supply, Berthoud, Colorado—Managed surface water quality testing of the

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Cache La Poudre River and Grand Lakes drinking water systems. Project included water quality sampling in accordance with USGS protocol and collection of flow data at 26 sites per month utilizing a mobile field laboratory.

Groundwater Treatment System Design, Denver, Colorado—Project engineer for the design and installation of a groundwater treatment system for iron, arsenic, and uranium at an apartment complex. The system utilizes ion exchange media and filtration to remove the metals prior to discharge to the storm sewer.

University Campus Development, Roosevelt Island, New York, New York—Project manager for environmental compliance portion for development of the 15-acre Cornell NYCTech campus. Assisted with the development and implementation of a strategy to manage impacted soils onsite and limit expenses associated with offsite waste disposal. Conducted Phase II environmental site assessment, including the investigation of soil, groundwater, and soil vapor; onsite construction support for excavation of soil; environmental support for demolition, asbestos, dewatering and lead abatement; and State Pollutant Discharge Elimination System permitting support. Provided agency support for Roosevelt Island Operating Committee, New York City Department of Environmental Protection, New York City Department of Transportation, and New York City Economic Development Corporation.

Vapor Intrusion Investigation and Mitigation Design, Woodridge, New Jersey—Project manager and engineer for the design, construction, and operation of a vapor mitigation system) for a 1.7 million square foot warehouse with historical petroleum and chlorinated solvent impacts. The system included 645 vapor extraction wells connected to 11 blowers to mitigate elevated levels of volatile organic compounds, specifically trichloroethene (TCE) and benzene, from migrating into the building at levels in exceedance of the New Jersey Department of Environmental Protection (NJDEP) indoor air screening levels. Provided technical and strategic support for ongoing litigation with the former property owners regarding remediation expenses.

Chlorinated Solvent Remediation, Parsippany, New Jersey—Provided engineering and operational support for the implementation of an *in situ* injection program and soil vapor extraction (SVE) system to remediate TCE soil and groundwater impacts at an existing strip mall. Conducted field oversight during the subsurface injections of emulsified vegetable oil and zero valent iron.

Mold Insurance Claim Support, Breiginsville, Pennsylvania—Project manager for a $1.1 million mold remediation insurance claim at a 183-room hotel and conference center. Provided mold assessment oversight, cost estimation, invoice review, and coverage recommendations to the insurance company financing the remediation.

Soil Vapor Extraction System Expansion, Brooklyn, New York—Project engineer for the expansion design of an SVE system for a closed oil terminal and processing facility. The expanded system includes the installation of six additional SVE wells and associated piping to target and treat elevated levels of methane in the subsurface.

Preliminary Environmental Assessment, Los Angeles, California—Developed and implemented a preliminary environmental assessment for a public charter school development. The assessment included soil and soil vapor sampling, an evaluation of the existing and former onsite oil wells, and development of a conceptual site model and appropriate remedial options. Coordinated with the California Department of Toxic Substances Control to gain the necessary approvals to complete the assessment and remedial work on an expedited time frame to avoid delays in the construction schedule and school opening.

Oil and Gas Environmental Due Diligence, Vernal, Utah—Managed and conducted an environmental due diligence of approximately 126 production wells and associated assets located in the Uinta Basin.

Per- and Polyfluoroalkyl Substances Investigation and Treatment, Confidential Location—Provided engineering support for the installation of a municipal drinking water treatment system for per- and polyfluoroalkyl substances contamination emanating from an industrial facility. Also provided cost estimation support for the remediation of soil, sediment, and groundwater at the facility in accordance with state regulations.

Stormwater Treatment and Constructed Treatment Wetlands

Municipal Separate Storm Sewer System (MS4) Evaluation and Implementation Support, Colorado Springs, Colorado—Project manager and technical lead for the evaluation of *Escherichia coli* (*E. coli*) bacteria data for the Fountain Creek watershed as part of the City of Colorado Springs' MS4 implementation requirements. Provided technical and strategic support for the implementation of the MS4 and regulatory agency support for the Colorado Department of Public Health and Environment (CDPHE).

Stormwater PCB Total Maximum Daily Load Implementation, Altavista, Virginia—Project manager and engineer for implementation of a track down sampling plan and remedial alternative evaluation for PCBs at an industrial facility in Altavista, Virginia, using Method 1668 sampling. Developed a conceptual site model using groundwater, stormwater, soil, and sediment data to identify and reduce PCB migration offsite. Lead engineer for the conceptual design of a treatment wetland to remove low-level (parts per trillion) PCBs from the combined stormwater discharge of an industrial Site and municipal water treatment facility.

Oil and Gas Produced Water Treatment, Craig, Colorado—Project manager and engineer for a pilot system constructed wetland to treat low-level hydrocarbons and aquatic toxicity from produced water prior to surface discharge for an oil and gas facility.

Coal Bed Methane Produced Water Compliance and Treatment, Trinidad, Colorado—Provided technical and regulatory support for the development of a water treatment and management strategy for a coal bed methane field. Developed a strategy to avoid triggering additional regulatory requirements by modeling and tracing the produced water flow path in the watershed. Assisted in negotiations with CDPHE regarding changes to the stream standards and NPDES permitting requirements for the operator.

Mining Stormwater Treatment Evaluation, Kearny, Arizona—Project manager for the pilot study evaluation and conceptual design of a compost-based natural media filter to treat residual copper and arsenic in stormwater at an active copper mine in Kearny, Arizona.

Landfill Leachate Plume Investigation and Treatment, Holtsville, New York—Project manager and engineer for the investigation, remedial design, and implementation of an anaerobic compost wetland to treat groundwater impacted by leachate generated from a former landfill. The leachate plume produces reducing conditions that result in elevated levels of iron and manganese. The system is designed to contain and extract the groundwater plume, and remove the metals through anaerobic precipitation, before aerating and infiltrating the treated groundwater.

Landfill Leachate Constructed Treatment Wetland Evaluation, Newton County, Indiana—Project manager for the pilot study evaluation and design of a constructed treatment wetland and phytoremediation plot to treat leachate at a closed landfill.

Aluminum Smelter Zero-Discharge Constructed Treatment Wetland Design, Ras Al-Khair, Saudi Arabia—Engineer for a 23-acre constructed wetland system design for the treatment of sanitary and process wastewater generated from the construction and operation of an aluminum refinery, smelter, and rolling mill complex. The system, which can treat up to 1.4 million gallons per day, features four anaerobic treatment tanks, six wetland cells, and two bauxite disinfection and polishing cells.

Bauxite Residue Treatment Wetland Design, New Kensington, Pennsylvania—Engineer for the design of a 1,900 ft^2 vertical flow filter cell to supplement an already existing wetland-based water treatment system at a technical facility. The treatment cell uses bauxite residue—a byproduct of the alumina refining process—to polish and disinfect up to 50,000 gallons of wastewater each day.

PCB Treatment Natural Media Filter Design, Cressona, Pennsylvania—Engineer for the design of a natural media filter cell at an aluminum extrusions facility. The 0.25-acre natural media filter cell was designed to remove low-level PCBs from impacted stormwater at the site.

Phytotechnologies

Petroleum Refinery Remediation, East Providence, Rhode Island—Project manager for the monitoring and evaluation of a 45-acre hybrid poplar phytoremediation plot at as a component of a closure of a historical petroleum refinery. The purpose of the phytoremediation plot is to hydraulically control and remediate contaminants from a dissolved-phase groundwater plume. The performance evaluations include seasonal monitoring inspections and growth measurements, modeling of evapotranspiration, and evaluation of recent groundwater measurements.

Former Gas Station Remediation, Dos Palos, California—Project manager and technical specialist for the design and implementation of a pilot phytoremediation plot to treat soil and groundwater contamination at a former service station. The pilot installation included an evaluation of using oxygen release compound (*ORC*®) and compost tea to boost microbial degradation of contaminants within the tree root zone.

Evapotranspiration Cap Design, Los Angeles, California—Project manager and engineer for the design of an evapotranspiration cap for a landfill as part of the site redevelopment into residential and park land.

Landfill Phytoremediation Cap Design, Linden, New Jersey—Project manager and engineer for conceptual design of an alternative landfill cap for an active petroleum facility. The cap design utilizes phytoremediation and evapotranspiration methods to sustainably minimize leachate, control shallow groundwater, and remediate the landfill waste.

Former Refinery Remediation, Trenton, New Jersey—Project manager and technical specialist for the conceptual evaluation of a phytoremediation plot to treat soil and groundwater contamination at a former refinery.

Ecological Services

Industrial Landfill Closure, Rensselaer, New York—Field manager and ecologist for the evaluation of an alternative landfill cap designed for natural habitat use for a former chemical facility. Project included landfill cap inspections; groundwater monitoring; wildlife surveys for birds, pollinators, amphibians, insects, and mammals, and grassland and wildflower plant species; and nest monitoring for green herons.

Landfill Stabilization and Habitat Creation, Brooklyn, New York—Field manager and ecologist for coastal shoreline stabilization and grassland mitigation of an 80-acre island located off the coast of Brooklyn, New York. The design provided slope stabilization improvements and the creation of warm season maritime grasslands to provide foraging, cover, and habitat for ground-nesting birds. Bird surveys were completed during monitoring activities.

Wildlife Habitat Enhancement and Certification, Belvidere, New Jersey—Field manager and ecologist for land management of a former munitions facility. Project work included implementation and monitoring of wildlife enhancement projects for small and large raptors, song birds, and bats. Vegetation surveys completed for habitat areas and wildlife observations for birds, amphibians, insects, and mammals.

Wildlife Habitat Enhancement and Certification, Williamsburg, Virginia—Field manager and ecologist for land management for wildlife enhancement projects at a former chemical facility. Responsibilities included baseline vegetation and wildlife survey for bats, birds, amphibians, reptiles, mammals, and insects; management of purple martin colony; evaluation of pollinator meadow areas; and installation of habitat features for eastern bluebird, wood ducks, and bats.

Park Redevelopment, Staten Island, New York—Project manager for the design of an open-water detention wetland and bioretention system to treat stormwater from recreational buildings at a 110-acre park located in Staten Island, New York, for the New York City Department of Parks and Recreation. As part of PlaNYC's focus on sustainability, the stormwater design worked to minimize disturbance and protect the surrounding freshwater wetland resources and natural areas, while maximizing the non-structural methods to reduce stormwater runoff.

Publications

Morano, J.L., D. Salisbury, A. Rice, K. Conklin, K. Falk. 2012. Seasonal and geographical patterns of fin whale song in the western North Atlantic Ocean. *J. Acoust. Soc. Am.* 132(2):1207-12.

Presentations/Posters

Conklin, K. 2019. The next generation of green infrastructure—Using geochemistry and ecology to treat contaminants in stormwater and wastewater. 14th International Erosion Control Association Annual Conference, Denver, CO.

Conklin, K. 2019. Trash to treasure: A case study in implementing living shorelines in urban landscapes. 14th International Erosion Control Association Annual Conference, Denver, CO.

Conklin, K. 2019. Webinar. From trash to treasure: A case study in implementing living shorelines in urban landscapes. International Erosion Control Association.

Conklin, K. 2018. Integrating ecological function into natural remediation designs. 14th Society of Wetland Scientists Annual Conference, Denver, CO.

Conklin, K., and A. Ludlow. 2017. Integrating ecological elements into phytotechnology designs. 14th International Phytotechnologies Conference, Montreal, Canada.

Conklin, K. 2015. Lessons learned from the long-term monitoring and management of a large-scale phyto plot. 12th International Phytotechnologies Conference, Manhattan, KS.

Conklin, K. 2014. White Island: A case study in implementing living shorelines in urban landscapes. 14th American Ecological Engineering Society Meeting, Charleston, SC.

Conklin, K., and A. Ludlow. 2013. White Island: From trash to treasure. 11th International Phytotechnologies Conference, Syracuse, NY.