Tufts CEE Seminar Series Presents

DAVID ADILMAN, P.G.
Geosyntec Consultants Inc.

Seminar Title: Combined Methodologies for Quantifying Groundwater Discharge to Surface Water: The Gowanus Canal Superfund
Date: Friday March 5, 2021 - 12:00pm - Eastern Time (US & Canada) - Virtual Event

David Adilman is a Principal Hydrogeologist with Geosyntec Consultants in Acton, Massachusetts. He has more than 25 years of experience focusing on investigation and remediation of contaminants in soil and groundwater. He has expertise in the field assessment of hydrogeologic systems, applied groundwater modeling, the fate and transport of contaminants in groundwater, data acquisition and natural attenuation processes. He has years of groundwater remediation expertise including a wide variety of injection and extraction-based systems. Mr. Adilman has a B.S. in Geology from Miami (Ohio) University, and a M.S. in Energy and Mineral Resources from the University of Texas-Austin.

The seminar will discuss the Gowanus Canal Superfund Site as one of the largest sediment remediation projects in the country. Instrumental to the remedial design was identifying and quantifying groundwater discharge (upwelling) to surface water in this tidally influenced and heavily urbanized setting. The approach first utilized Distributed Temperature Sensing (DTS) and Trident Probe surveys to identify potential groundwater discharge areas. Following these surveys, a quantitative approach was used to characterize groundwater discharge into the Canal, focusing on higher potential areas. Methods included ultrasonic seepage meter surveys to provide high resolution specific discharge measurements across tidal cycles, vibrating wire piezometer nests for evaluating long-term vertical hydraulic gradients beneath the Canal and estimating long-term specific discharge rates, pressure transducers to monitor Canal stage and groundwater levels in the uplands, and barge-mounted sonic drilling rigs for sediment core collection and temporary well installation to obtain hydraulic conductivity data through flexible wall permeameter testing and slug testing. Results were compiled to derive long-term specific discharge for each measurement station, estimation of discharge velocity, and canal-wide interpolation of long-term specific discharge. These data were then used as calibration targets for a 3D numerical model which became an essential tool for performing remedial design simulations.