

Ecological Risk Assessment: Garden State Parkway Project

Evergreen Environmental, LLC
Bass River Township, NJ

Princeton Hydro was hired to provide scientific, engineering, permitting, herbicide treatment, and construction oversight support to deliver compensatory estuarine wetland mitigation credits required for a highway expansion project in southern New Jersey.

Among Princeton Hydro's Natural Resources group's responsibilities was to conduct a due diligence soil quality assessment of the site. The historic pesticide DDT and certain secondary metabolites were detected during an initial sampling event at levels above soil cleanup criteria and ecological risk screening thresholds.

Princeton Hydro developed and implemented several supplemental investigation phases that established the magnitude and distribution of DDT at the mitigation site as well as the broader marsh. Based on supplemental investigation findings, the proposed mitigation site was demonstrated to be a DDT "hot spot" in the local marsh landscape.

At a point during the permitting phase for which approval was uncertain, Princeton Hydro factored a thorough understanding of DDT fate, transport, and ecotoxicology information into the wetland mitigation design and presented a revised plan to the state's oversight agencies. By incorporating "hot spot" remedial measures into the wetland mitigation design and furnishing multiple lines of evidence that indicated low bioavailability (therefore limited exposure) for DDT in the marsh in general, regulatory officials authorized the wetland mitigation project.

The design was implemented in late summer 2008 and upon demonstration of the successful outcome, the project will furnish six mitigation credits for much-needed highway expansion activities. Moreover, the approximately 83-acre site will be conveyed to U. S. Fish and Wildlife Service to expand the Edwin B. Forsythe National Wildlife Refuge .

