

SURFACE WATER/SEDIMENT AND FISHERY SURVEY**By****Frank P. Castellano, P.G.****Lisa Santoro****P.W. Grosser Consulting Engineer & Hydrogeologist, P.C.****100 South Main Street, Suite 202****Sayville, NY 11782**

P.W. Grosser Consulting Engineer & Hydrogeologist, P.C. (PWGC) and its affiliate, Kalogeras & Grosser Consulting Engineers (K&G), were contracted by Gibbons, Esposito and Boyce Engineers, P.C. (GEB) to provide environmental engineering support work on several pond projects throughout Nassau County.

Under subcontract to the Nassau County Department of Public Works (NCDPW), GEB was responsible for performing the engineering design necessary to perform a de-silting maintenance program for a number of small ponds located throughout residential areas of Nassau County. The intent of this program is to improve both the aesthetic condition of the ponds and the potential of the waters as fisheries habitats. Part of GEB's responsibilities included preparing dredging permit applications for submittal to the NYSDEC and contract documents. To comply with the State Environmental Quality Review Act (SEQRA), the dredging permit required a comprehensive environmental quality evaluation of the ponds to in order to determine potential impacts from the dredging project.

Twin Ponds: For this project, K&G developed a comprehensive work plan and conducted the field work necessary to address the following items required by the NYSDEC to supplement the required Environmental Assessment form :

- Characteristics of the surface water quality of the ponds
- Current fisheries data
- Characteristics of the sediment quality of the ponds

In order to assess the water quality of the ponds, sampling and analytical testing was performed. The purpose of this sampling was to determine the environmental baseline conditions of the surface water of the ponds prior to dredging. Surface water parameters monitored included:

pH
Dissolved Oxygen
Temperature
Conductivity
Salinity
Turbidity

In order to determine the characteristics of the bottom silt layer of the pond, sediment samples were collected from a floating work platform using dedicated split spoon samplers, and analyzed for pH, reactivity, and ignitability. In addition, the samples were also analyzed for metals and pesticides/herbicide by the Toxic Characteristic Leaching Procedure (TCLP) using USEPA SW-846 methodologies 6010 and 8080/8150 respectively. Results of the analysis aided in the determination of the proper disposal pathway for the dredge spoils.

As part of the characterization process, the flora and fauna in the ponds and surrounding area were inventoried to identify what fish species inhabited the pond and to calculate their respective population densities. The fish were collected, identified, measured, counted, marked and then released using the seine haul method.

A Characterization Report was prepared for GEB in May 1996, which included documentation of the work performed including laboratory analyses, depth of the pond, thicknesses of the silt layer to be dredged together with the types of indigenous vegetation and water fowl as well as appropriate recommendations.

Manhasset Valley Park Pond and Whitney Pond: The scope of work necessary to characterize this pond was similar to that described for the Twin Ponds. Unique to this project, however, was the installation of a shallow groundwater monitoring well installed to evaluate the relationship between local groundwater elevation and the surface water elevation.

Milburn Pond, Papermill Pond & Cammans Pond: These ponds required only the characterization of the silt deposits for disposal. Using a small jon boat and auger/dredge sampling techniques, K&G personnel collected composite samples of the pond's bottom for laboratory analysis. In accordance with the Resource Conservation and Recovery Act regulations, the samples were analyzed for toxicity, reactivity, ignitability and corrosivity in order to evaluate proper handling and disposal methods.

Sedimentation Pond: The Sedimentation Pond was the first pond project performed by K&G for this contract. The objective for this pond project was to determine the appropriate disposal pathway for the silts in the pond, therefore the scope of work for the Sedimentation Pond mirrored that of Milburn, Papermill and Cammans Ponds. The analytical results performed for disposal characterization indicated that the pond bottom material was characteristically hazardous based upon reactive sulfide levels. Currently, K&G is working closely with GEB, Nassau County and the NYSDEC to develop an appropriate scope of work for the dredging project that will ensure worker safety and proper handling of the dredge spoils.

Halls Pond: A subsurface investigation was completed and monitoring wells were installed at this location. The information was used to provide plans and specs for the preparation of a production well design and application of a NYSDEC production well permit.