

Project: Woodland Reservoir Ultraviolet Light Treatment Facility Project

Location: Syracuse, NY

Client: City of Syracuse:

Cost: \$20M

Year: 2013

Work Performed:

- Verify Existing Conditions
- Set Baseline and Benchmarks
- Stake for Construction
- Monitor Site for Movement
- Adjust and Report Monitoring Data

This project was undertaken in order to improve the treatment of municipal water using an ultraviolet light treatment process. The project is being conducted for the City of Syracuse, and is located at the Woodland Reservoir at the intersection of South Geddes Street and Stolp Avenue.

The reservoir project, which will take two years to complete, will require the demolition of three buildings, and the construction of two new structures that will house ultraviolet light treatment equipment. The project is being required by federal regulators in order to maintain the City's exemption from filtering water from Skaneateles Lake.

The contractor retained Prudent to provide site control, staking of proposed facilities, and movement monitoring during construction.

The site control tasks entailed familiarization, recovery, and confirmation of existing horizontal and vertical control points. Prudent set additional points for construction, and established a baseline and vertical reference points away from the construction area to implement the monitoring program.

Prudent was also tasked with staking the ultraviolet light treatment building, the upper chemical vault, the excavation support system and the bypass piping area.

The ongoing monitoring program is intended to detect movement around the existing reservoir during excavation

and as construction progresses. As such, Feno markers were installed along the dam crest to determine if construction activities were deforming the earth between the construction site and the reservoir. In addition, targets were placed on the piles and between the tiebacks to detect shifting of the excavation support system.

Because of the on-going construction and sighting limitations for the monitoring points, new control was placed for each monitoring session. The new control points were referenced to the baseline and benchmarks that were set away from the construction area. A digital level and reflector-less total station were used to collect readings. TPS measurements were processed with Star*Net and adjusted with least squares. The differential leveling was adjusted and considerable care was taken to provide reliable monitoring results. The results are submitted in a spreadsheet that track the positions of the monitoring points from the date of the initial observations.



Excavation Support Wall and Bypass Piping Area



Woodland Reservoir