

August 2010: Construction this period has focused on three major components of the WWTF Improvements project:

- Construction of the new Aeration Blower Building.
- Decommissioning of the chlorine gas disinfection system.
- Construction of the foundation system for the new Operations, Control, and Laboratory Building.

Aeration Blower Building

The Aeration Blower Building is being constructed to house a series of air blowers for the new fine bubble diffused aeration system. This brick structure is located near the rear of the existing WWTF parcel adjacent to the aeration tanks. The blowers will provide air to these tanks through a grid of ceramic diffusers installed along the floor of the existing tanks.

Drilling of the pile foundation system for the Aeration Blower Building began in April 2010. The foundation, base slab, walls and roof of the Blower Building are in place and work to complete this component of the project is ongoing.



Exterior of the New Aeration Blower Building



Interior of the New Aeration Blower Building

Decommissioning of Chlorine Gas Disinfection System

On July 20, 2010, the WWTF Improvements project reached the first major milestone with the decommissioning of the existing chlorine gas disinfection system. This was accomplished after the Contractor installed and started-up a temporary disinfection system to inject liquid sodium hypochlorite into the treated effluent prior to discharge to the Merrimack River. The two remaining 1-ton chlorine gas cylinders (see photo below) were then removed from the WWTF site; eliminating any future public health and safety concerns associated with a chlorine gas leak at the plant. Accordingly, the Emergency Response Plan for chlorine gas at the WWTF has since been deregistered with the Newburyport Fire Department.

At this time, work continues on the interior of the Disinfection Building to prepare the existing space for installation of the new permanent liquid sodium hypochlorite system and ancillary equipment. By the end of September, the Contractor expects to complete the installation of the new disinfection system. Following are some before and after photos of the decommissioning work.

Chlorine Gas Cylinder Room



Before



After

Disinfection System Metering & Dosing System



Before



After

Operations, Control and Laboratory Building

Construction of the foundation system for the new OCL (operations control & laboratory) Building has also begun. However, during the excavation and removal of contaminated material from the 115 Water Street site, the Contractor encountered a granite capped rock wall running in a north-south direction along the eastern property line. The location of the below grade wall interfered with the outermost row of proposed piles for the new OCL Building Foundation. As a result, the location of the building had to shift approximately 15 feet to the west. The Contractor

has since installed all 42 piles required for support of the building foundation, and he is currently working on the installation of the vapor barrier system prior to pouring the concrete foundation.

It should be noted that the shifting of the OCL building will require similar shifting of other site related improvements such as the proposed access road, sidewalk, parking, drainage, etc. To this end, the project team has been working closely together with the Planning Department to develop a revised site plan for presentation to the Planning Board, Zoning Board of Appeals, and the Conservation Commission within the next month. All of these local boards have issued approvals for the project. Accordingly, any changes to the site plan are subject to their final review and approval.



**OCL Building Pile Foundation System
(view looking towards Water Street)**

As part of the effort above, the site plan will be revised to incorporate two cost reduction measures that were approved shortly after the construction contract was awarded in January 2010. Because the bid prices for Contract 1 were approximately \$1.5M higher than anticipated, a number of cost reduction measures were evaluated by the Newburyport Sewer Commission. By implementing the cost reduction measures below, the overall construction cost for Contract 1 will be reduced by approximately \$310,000.

Fuel Oil Storage Tank: The type and location of the proposed fuel oil storage tank for the new standby generator and switchgear will be changed in an effort to reduce project costs. Instead of installing an underground storage tank as originally planned, an above-ground storage tank (AST) will be provided. The AST will be located adjacent to the generator and the electrical service switchgear. However, as a result of shifting the OCL Building 15 feet to the west, the AST, generator, and electrical switchgear will also shift to remain in alignment with the OCL building. This will maintain visual screening of the equipment and provide an adequate corridor for drainage installation.

Ground-mounted Photovoltaic System: As a further cost reduction measure, the proposed ground-mounted Photovoltaic (PV) system has been deleted from the project. This system was planned to be located adjacent to the existing aeration tanks along the waterfront side of the WWTF parcel. By eliminating the ground-mounted PV system, the city will not only realize a significant cost reduction, but will also allow for the construction of a third set of aeration tanks should additional capacity be required in the future.