

# City of Manchester, NH

## Environmental Protection Division

### Primary Clarifier & Gravity Thickener Upgrade Project

Underwood Engineers  
99 North State Street, Concord, NH 03301  
(603) 230-9898

The City of Manchester, New Hampshire owns and operates a 42 million gallon per day wastewater treatment facility under their Environmental Protection Division (EPD). The wastewater treatment facility, located at 300 Winston Street, was originally constructed in 1975. As part of the primary clarification and gravity thickening processes, the facility has three 130-ft. diameter primary clarifiers and three 50-ft. diameter gravity thickeners. These settling tanks and their internal steel components had been in service for 40-plus years, with the exception of one primary clarifier and one gravity thickener that were added in 1993. All three primary clarifiers and gravity thickeners were still performing acceptably; however, the internal steel components were deteriorated and had reached the end of their useful life.



In June 2015, the EPD selected Underwood Engineers to provide engineering design and construction services to upgrade the internal components of all primary clarifier and gravity thickener tanks. A construction contract was signed with Methuen Construction in fall of 2016 with a total project cost of \$9 million. Major project highlights included replacement of the internal components of the clarifiers and thickeners with stainless steel, but also included custom designed odor control covers for the indoor gravity thickeners, interchangeable drive units for the



clarifiers and thickeners, new thickened sludge pumps, new thickened and primary scum pumps, miscellaneous valve and piping upgrades, and pre and post construction performance testing. The Primary Clarifier and Gravity Thickener Upgrade project concluded in fall of 2018 and provided the City's wastewater treatment facility with new equipment that will last another 40 years.