



2010 APWA Public Works Project of the Year Award Environmental Category

VILLAGE OF MANHATTAN, IL

Radium Removal by Hydrous Manganese Oxide (HMO) Treatment Process

CLIENT CONTACT

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PROJECT MANAGER

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CONSTRUCTION COST

\$3,500,000

YEAR COMPLETED

2007



Because of the naturally occurring radium in their well water, as well as to keep up the growth of the community, the Village of Manhattan constructed a water treatment facility. The project consisted of the construction of state-of-the-art facilities that included a 1.7 MGD deep well, a 3,000 square foot water treatment building, radium removal filter, enhanced electrical and control system, emergency generator and an elevated water storage tank.

Located on Smith Road in Manhattan, the facility provides potable water to Village residents. This treatment plant was designed to use the Hydrous Manganese Oxide (HMO) process which is one of the most economical radium removal processes. The HMO process uses media filtration and is also capable of simultaneously removing iron and manganese. In addition a backwash basin, with a capacity of one full backwash, was constructed to allow slow release of the backwash water into the sewer system. In addition to removing the radium from the water, the facility provides enhanced local water service, increased water pressures and water system reliability.

The entire project was constructed off-line in order to avoid disruption of the existing water system operations. Post construction tests demonstrate that 85-90% radium removal efficiency is being achieved and several smaller wells were capped as part of this project to help streamline the water system and reduce operating costs.

The 1,000,000 gallon elevated storage tank is steel and is of the ellipsoidal design which takes up less ground space allowing more room for the other site facilities.

