

DENNIS WATER DISTRICT

Board of Water Commissioners

Minutes of Meeting held

March 13, 2007

A meeting, having been duly posted, was held this date at the main offices at 80 Old Bass River Rd., S Dennis. The meeting was called to order by Edward A. Crowell, Chairman at 10:00 AM. Water Commissioner Paul F. Prue and Charles F. Crowell were present along with the following District officials:

David Larkowski, Superintendent

Sheryl A. McMahon, Clerk & Treasurer

Thomas S. Hydro, District Manager and Michael C. Havener, P.E. representing Layne Christensen Company provided a PowerPoint presentation regarding the LayneOx filtration system. Iron needs to be oxidized in order to filter for removal. A catalyst is also added to make the reaction happen faster. LayneOx is considered a high-rate media. The catalytic media all have the same active ingredient – manganese dioxide. Greensand Plus is a type of sand that is coated with manganese dioxide. The difference with LayneOx is that Greensand is typically filtration and absorption which reduces the amount of water that passes through while LayneOx uses potassium permanganate as an oxidant. Filter loading rates will be higher because LayneOx will let more water through the media. The Superintendent asked if a longer contact time with the oxidant while the water is on the way to the plant was beneficial. They stated that the pH treatment can be done before or after the treatment plant.

Each plant will treat about 2,800 GPM. LayneOx claims to limit the loss of head. They claim higher liquid loading rates, longer run lengths which is effective for high iron concentrations and less head loss. Typically, LayneOx systems have less than half the footprint of Greensand systems but, the bed depth is greater. It is a closed vessel system. Backwashing can occur more frequently due to iron break through rather than the loss of head. Backwash would need to be scheduled during non-peak times. Fifty-thousand (50,000) gallons of water are necessary per plant for backwashing. The proposed pilot study will also give an indication on how long the run times will be before having to backwash. Iron concentrations tend to shorten run-times more than manganese does. Equipment costs are comparable to Greensand systems.

There was additional discussion on the backwash process and discharge. The pilot study would take approximately two to three week. Backwashing is automatically scheduled based on run times or pressure. Currently, Mashpee is 400 gpm at .3 to 1.3 iron concentrations. The relationship between engineering firms and those engineers that design the actual treatment systems was discussed. In their experience, the only instance of difficulty experienced was outside of New England and it involved the backwashing design.

There was a short discussion on the cost of the pilot study with a scope of work that would include a comparative side-by-side analysis of LayneOx and Greensand Plus.

LayneOx proposed to cover the pilot study for half of the originally quoted price. The Superintendent would like to do the study in April.

On a motion made by Paul. F. Prue, and duly seconded, the Board ***UNANIMOUSLY VOTED:***
to accept the LaneOx pilot study proposal at a quoted price of \$5,500.

On a motion made by Charles F. Crowell, and duly seconded, the Board ***UNANIMOUSLY***
VOTED: to adjourn the meeting at 11:16 AM.

Respectfully submitted,

Sheryl A McMahon, Clerk