J. ROBERT FOLCHETTI & ASSOCIATES. LLC
*CIVIL/ENVIRONMENTAL ENGINEERS*

**MEMO TO**: Village of Brewster Board of Trustees

**FROM**: Michael P. Corcoran, P.E.

**DATE**: July 31, 2008

**SUBJECT: VILLAGE OF BREWSTER WASTEWATER TREATMENT PLANT ODOR ISSUES**

Please note that J. Robert Folchetti and Associates (JRFA) is aware of the sludge handling issues at the WWTP which are leading to odors at the site. JRFA has instructed STES to immediately replace the covers on the gravity thickener tank and turn on the odor control system for this tank to eliminate the odors. We will also be meeting with STES on Friday, August 1, 2008 to review the sludge handling and odor problems so that these issues can be resolved as soon as possible.

The problem with sludge handling became apparent in the beginning of June 2008 when most sewer connections had been completed and the weather began to warm up. At this time, the sludge hauling from the plant was increasing and a thick blanket developed on the top of the gravity thickener. Because of these problems, JRFA met with the plant operator on June 10, 2008 to review the sludge handling process. As a result of the plant inspection, JRFA made a number of recommendations to STES on the sludge handling process (6/12/08 letter attached).

As observed by JRFA at the 6/10/08 inspection, the problem with the sludge handling is due to the growth of a filamentous bacteria named Beggiatoa. These filaments kept the sludge particles from binding together and settling to the bottom of the settling tanks and gravity thickener tank. This causes the sludge to float which makes the sludge removal difficult and leads to odors.

In order to eliminate the problem with the filamentous bacteria, JRFA and STES will take the following actions:

1. A bioorganic catalyst called Eco Catalyst will be added to the influent sewer flow to break down the grease entering the plant. Accumulations of grease can cause an environment that produces sulfides. The Beggiatoa are reproducing because of high sulfides and low dissolved oxygen in the rotating biological contactors. Note that this catalyst also reduces odors.
2. Put the non-potable water pumps back in service and pump clean effluent water to the gravity thickener tank to prevent the sludge from becoming septic. This pumping system is being repaired and should be back on-line in a few weeks.

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3. Prior to putting the non-potable water system on line, use temporary pumps to pump highly oxygenated plant effluent water to the gravity thickener tank and the influent to the RBC's.
4. Possibly add sodium hypochlorite to the influent flow to kill the Beggiatoa. This would have to be done carefully to avoid killing the "good bugs".

JRFA will inform the Village of the results of our August 1, 2008 meeting, and keep the Village informed of our progress until this issue is resolved.

MPC/jac

Cc: John E. Folchetti, P.E.
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