

Bay Area Clean Water Agencies
Collection System Committee

Siphon Cleaning Practices

Notes from a Round-Robin Committee Discussion on January 26, 2012

Cleaning Schedules, Methods and Equipment:

- Siphons are cleaned once every quarter with a hydro jetter.
- Siphons are cleaned once every two weeks with a hydro jetter.
- Siphons are cleaned with a hydro jetter and vactor.
- Some siphons are cleaned once a month. Cleaning techniques for these are the same as for other lines. Pipes directly downstream are included on the same cleaning schedule as the siphon.
- Cleaning of bigger siphons is contracted out.
- Siphons are dewatered and inspected once a year.
- Siphons are cleaned biannually using a Bulldog nozzle on the hydro jetter.
- Some siphons are cleaned once a month.
- Siphons are cleaned once every 90 days.
- One agency has a double-barrel siphon that is cleaned once every two months.
- One agency is experimenting with Super Slam (a 12-jet high volume nozzle), for cleaning siphons.
- Several agencies reported that Smart Covers had been installed upstream of the siphons, so that flow levels could be monitored and cleaning needs anticipated.
- Siphons are cleaned early in the morning (around 4:00 am). The siphon is blocked and then vacuumed out quickly enough so as to minimize backup. This tactic does not work as well with high flow lines, so the agency is looking into contracting out cleaning of these lines.
- Single-barrel siphons are pumped out before cleaning.
- For double barrel siphons, one barrel is shut off at a time, allowing the other to be cleaned.
- When both barrels of a double-barrel siphon were left open, flow tended to favor one side, while grit built up faster in the other. In order to avoid this problem, now only one barrel of each double-barrel siphon is left open at a time.
- It was suggested that a trash pump with suction hose inserted into the siphon might be a viable cleaning method.

Grease:

- Grease is combated through an aggressive cleaning schedule (the siphon is cleaned once every two weeks with a hydro jetter), and through Fats, Oils and Grease (FOG) Program enforcement.

- Two different types of lift station degreaser (products by Windsor and Omega), are used for siphons. The degreaser is applied during the second week of the month and then followed-up with hydroflushing during the fourth week.
- CalFOG.org should include a side-by-side comparison on degreasers (surfactants, enzymes, etc.).
- One agency has used Bioamp from Chemsearch on pump stations, which keeps grease softer and easier to handle.

Other Notes:

- Some of the original siphon installations included upstream grit boxes. These boxes proved to be helpful, so some additional upstream catch basins were also added. Once a month the boxes are checked and vacuumed out as needed.
- One large siphon located under an estuary is particularly challenging to maintain. Approximately a foot of grease had accumulated in the siphon. A Sewer Hog worked well to clean grease and silt above the water line, but it has been difficult to determine conditions below the water line.
- One agency reported that siphons were being removed from the system wherever possible, usually by digging deeper lines. Although expensive, this is the preferable solution. In addition, plans for any new development that include siphons are not approved as such.
- A triple-barrel siphon configuration with elevation changes has been developed, which may also prove useful for odor control.