
Memorandum

TO: Kerri Hickenbottom

FROM: Mai Alqattan

SUBJECT: REVIEW OF ARCATA MARSH

DATE: 03/03/2017

Purpose

The purpose of this memorandum is to explain the process and steps that take place at Arcata Marsh in order for the people to have access to cleaner water.

Discussion

The wastewater travels through several cycles during its treatment. Primary, secondary, tertiary, and disinfection. At the marsh we were able to see the process almost completely from start to finish. The plant treatment receives anywhere from 2.5 to 3 MGD. However, the amount of wastewater it receives increases at certain times of the year, according to the staff. When the plant first receives the wastewater, it removes waste; in other words, objects that are not suppose to be flushed such as condoms, pharmaceuticals and oral flosses. Then the water transfers into a tank that helps in the removal of grit. That tank makes the water flow in a manner in which causes dense particles to sink to the bottom while lighter particles get suspended and removed. The water moves into a settling basin which we, unfortunately, did not have the chance to take a look at. In this tank the solids settle at bottom and scrapers remove sludge into panels. This step takes about 2 hours according to the staff. During the secondary treatment process, the water is transferred into anaerobic digesters that carries about 4000 to 5000 gallons

and has about 2 tons of bacteria. The bacteria feeds off the solids and nutrients, contributing to cleaner water. Then the water flows into the wetlands. We were able to see that there were plants on the surface of the wetlands that are blocking sunlight from reaching the algae. As a result, preventing them from photosynthesizing so they starve the bacteria. Disinfection was not mentioned in details by the staff, however, the water leaves the plant with a BOD of 40 mg/l which is way less than when it first came in 200 mg/l.

Issues were commented on during the trip

1- One student asked about whether there were any aerobic digesters or not.

2- A question regarding most recent modifications to the marsh was also asked.

3- Students were also curious on how long does the process take.

Conclusion

The trip to Arcata Marsh helped us in having a better understanding to how the water treatment plant works. The staff member was very knowledgeable and she provided us with details on every single process she showed us.