

# memo

## ENGR 115

To: Instructor Radecsky, Omar AlShafie  
From: Patrick Hassett  
  
Date: 12/6/2013  
Re: Arcata Wastewater Treatment Plant Visit and Tour

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**Purpose:** The purpose of this memorandum is to give a review of the field trip to the Arcata Wastewater Treatment Plant. The purpose of the field trip was to enhance our understanding of water quality while learning about the unique treatment process of the Arcata Wastewater Treatment Plant.

**Discussion:** Upon arrival to the plant we were given an overview of the different processes at the plant and statistics concerning the volume of treated water per day. The plant averages 1.1 MGD in the summer and 3-5 MGD in the winter (due to rain water in storm drains). We were guided through the Headworks and the Primary Clarifier. All throughout this our guide was explaining the biochemical changes that were occurring as well as the mechanical processes. One feature of the digester was that the methane created in the Digester from anaerobic digestion is collected and then combusted to heat the sludge from the Primary Clarifier before it enters the Digester. The heated sludge can be metabolized more quickly at higher temperatures.

After walking through all of the normal mechanized treatment processes we proceeded out to tour the different ponds and wetlands. The water first enters the Oxidation Ponds, and then proceeds to the Treatment Wetlands. The purpose of the treatment wetlands is to lower the BOD5 and TSS. This occurs at a slow rate and allows for the ecosystem to do the work. There are enhancement wetlands where the water is allowed to be processed for longer. This is almost like a tertiary treatment, though our tour guide insisted that it is not. After chlorination and dechlorination the water is finally released into the Humboldt Bay.

**Conclusion:** The tour was a helpful demonstration and explanation of the water treatment process. The most interesting thing that I learned was that they utilize the methane produced in the digester to heat and enhance the digestion process. We learned a lot and had fun.