

## MEMORANDUM

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**TO:** EILEEN CASHMAN AND KYLE SIPES

**FROM:** KARL OMAN

**SUBJECT:** REVIEW OF VISIT TO ARCATA WASTEWATER TREATMENT  
PLANT AND WILDLIFE SANCTUARY

**DATE:** 10/6/2016

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### **Purpose:**

The purpose of this memorandum is to provide information regarding the ENGR 115 class field trip to the Arcata Wastewater Treatment Plant and Wildlife Refuge.

### **Discussion**

The tour followed the sequence of wastewater treatment at the plant, stopping at treatment sites in chronological order from the headworks to discharge. The archimedes screws at the headworks were a marvel. It was a treat to see the ancient principle applied in a contemporary context. Our guide reported that the daily effluent volume received at the plant was currently near the figure of 1.1 million gallons, but also noted that the figure dramatically increases during periods of high rainfall.

The clarifier and digesters were the next tour stop. Our guide explained that the clarifier settles out suspended solids and sends them to the digesters, where an anaerobic digestion process converts the sludge into methane and compost. The methane is used to provide heat to the digester, and the compost is tested for pathogens before being utilized for various city projects.

Next came the oxidation ponds and treatment wetlands. Water from the clarifier is sent to the oxidation ponds, where algae removes BOD and suspended solids continue to settle out. The water continues to the treatment wetlands, and remaining BOD and pollutants are filtered out by the natural processes of the marsh.

Kyle Sipes concluded the tour with a brief explanation of Blue Frog Technology and its use at the treatment wetlands. He reported that sludge buildup at the wetlands has decreased its ability to effectively treat wastewater. The Blue Frog

devices aid sludge removal by generating currents in the water, effectively stirring up the sludge and triggering biological processes that cause the sludge to be digested.

## **Conclusions**

The tour gave a thorough background on the wastewater treatment processes at the plant and marsh. It was an informative introduction to a fascinating place. The technological processes at the plant demonstrate a synergy of various wastewater treatment methods that, when utilized together, result in an effective wastewater treatment strategy for the city of Arcata.