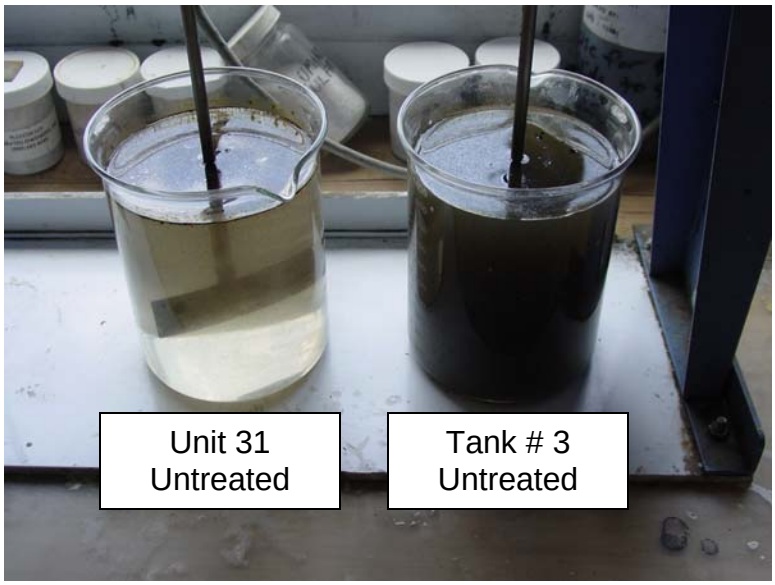
Diesel/Steam Power Plant
Oily/Water Emulsion

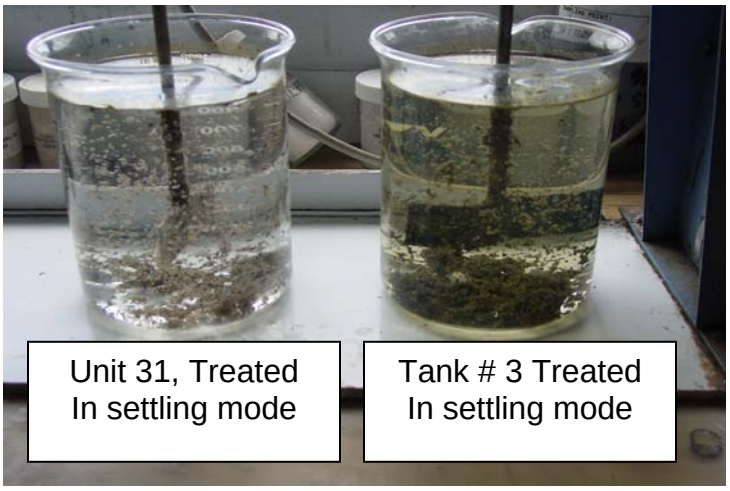
The water is from the operations of a steam power plant located in the Bahamas. The water samples were taken from the Unit 31 (lower oil content) and Tank #3 (a higher oil content). Some of the lab test parameters were:



	Unit 31	Tank # 3
pH	7.18	7.16
Conductivity	1,034 uS	1,547 uS
Total Dissolved Solids	543 ppm	820 ppm
Suspended Solids, untreated	142 ppm	758 ppm
Suspended Solids, treated	4 ppm	18 ppm
Chemical Oxygen Demand, untreated	120 ppm	1,100
Chemical Oxygen Demand, treated	16 ppm	820
Oil & Grease, untreated	121 ppm	209 ppm
Oil and Grease, treated	3.1 ppm	7.6 ppm

The samples were tested and it was found through the jartesting procedures that the Floccin K was the best choice for floc size and water clarity. The Unit 31 was dosed at 0.5 gram in 1,000 ml and the Tank # 3 water was dosed at 1.0 gram in 1,000 ml. The results are shown below:

40308 Greenwood Way
Oakhurst, Ca. 93644
Phone (559) 683-8284
Fax (559) 683-8913
www.wecleanwater.com
sales@wecleanwater.com



The lower photo has Tank 31 untreated and treated on the left 2 jars and Tank # 3 untreated and treated on the right. Analytical samples were taken and sent to the lab for testing of Oil & Grease as well as COD for both untreated and treated samples. The analytical samples were received by the lab, but unfortunately they made a mistake in the testing procedures so there were no results to report.

40308 Greenwood Way
Oakhurst, Ca. 93644
Phone (559) 683-8284
Fax (559) 683-8913
www.wecleanwater.com
sales@wecleanwater.com

Onsite Testing

Area 31

The wastewater generated comes from the oil water separator overflow from the diesel generator lube oil cooling loops. The water contains some free oil, but the majority is emulsified due to the degreasers and solvents used in maintaining the equipment. The wastewater quality varied from a light tea color to a dark oily color depending on the amount of oil the oil water separators removed as well as the flow.

Area 31 testing, untreated and treated samples

The ABU-200 was shipped to the site and setup at the Area 31 location for onsite testing. After initial setup and jartesting, the system was running in automatic mode treating 200 gallons every 10-15 minutes. The dosage was adjusted to optimize the water clarity and oil removal. In the afternoon, samples were taken of the untreated as well as the treated water and analyzed at the facilities lab using a spectrophotometer test method.

The water flow varied between zero and an estimated 20 gallons/minute from the oil water separator. The water flowed into a sump where it was pumped to the ABU-200. It was determined that a dosage of 0.2-0.5 lbs/200 gallons of the Floccin-K was effective in reducing the oil from 109 ppm to 2.2 ppm. Mix time was set at 60 seconds. If the dosage was increased, the water was even clearer and could reduce the oil to less than 2 ppm. It is estimated that it will take about 100 lbs/day to treat the Area 31 water.

Tank 3

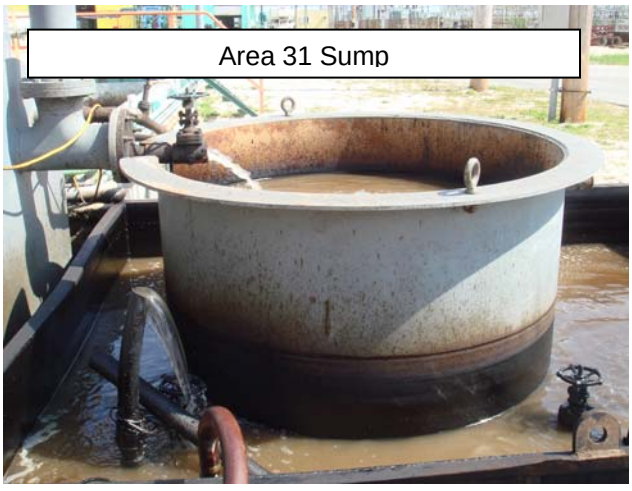
After Area 31 testing was completed and the operations staff were satisfied with the results, the ABU-200 was moved to the area known as Tank 3. Tank 3 contains the water from an oil water separator located in the fuel storage area as well as other areas. The water contains more emulsified oil than Area 31 and required a higher dosage in proportion to the oil content.

Tank 3 area testing, treated and untreated samples

The ABU was setup and run automatically after initial adjustments in the dosage of the Floccin. The dosage was set at 0.5-1 lbs/200 gallons, but we ran out of water to optimize the dosage. The oil level decreased from 187 ppm to 9.9 ppm with the samples tested. The water clarity was good, but turning the dosage of the Floccin K up 20% made the water much clearer and would decrease the oil level further. The mix time was set at 1-1/2 minutes and made a good size Floc. It is estimated that the dosage for Tank 3 is about 2.5-5 lbs/1,000 gallons of water.

Conclusion

Both of the waters treated well with the Floccin K and the ABU-200. It was discussed with the staff to install a permanent 50 gpm unit at the Area 31 and a portable CFU-20 at Tank 3 that could also be moved to other plant locations as needed to treat any oil/water spills or accumulations in the sumps or pipe galleys. Even with fluctuations in oil levels, the Floccin K was able to handle the fluctuations without changing the dosage.



Area 31 Sump

Tank 3 Sump

40308 Greenwood Way
Oakhurst, Ca. 93644

Phone (559) 683-8284
Fax (559) 683-8913

www.wecleanwater.com
sales@wecleanwater.com