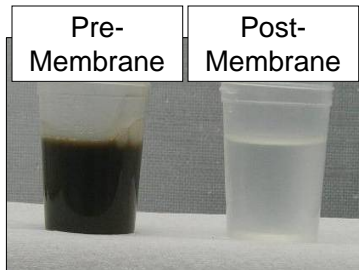


What Are Membranes?

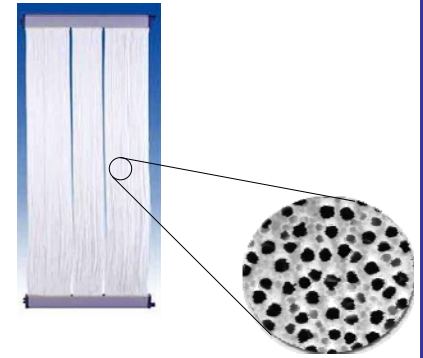
- Membranes are used for solids separation



- Water that passes through the membrane is called permeate

- Membrane fibers are hung in frames called “cassettes”

- There are different types of membrane systems. Cape Charles will use hollow fibers



- Cape Charles will use ultrafiltration, with membrane pore size of about 0.04 microns (25,400 microns = 1 inch)

- Ultrafiltration removes microscopic solids from the wastewater, including bacteria, cryptosporidium, and red blood cells



- Membrane cassettes are immersed in wastewater and permeate is pulled through the fibers



- The membrane system uses air bubbles to knock solids off the outside of the hollow fibers

- Permeate can be pumped back through the hollow fibers into the membrane tank to clean the membranes during a process called “backpulsing”

- Membrane tanks will be covered by grating, with header pipes to carry permeate and air to and from each cassette.

