



Water Treatment Plant Expansion

**1.5 mgd sand & anthracite filter
to
4.0 mgd ultrafiltration membrane**

mgd = million gallons per day



**Plant 1
Before Expansion
Project**

**Water Plants before
Expansion Project**

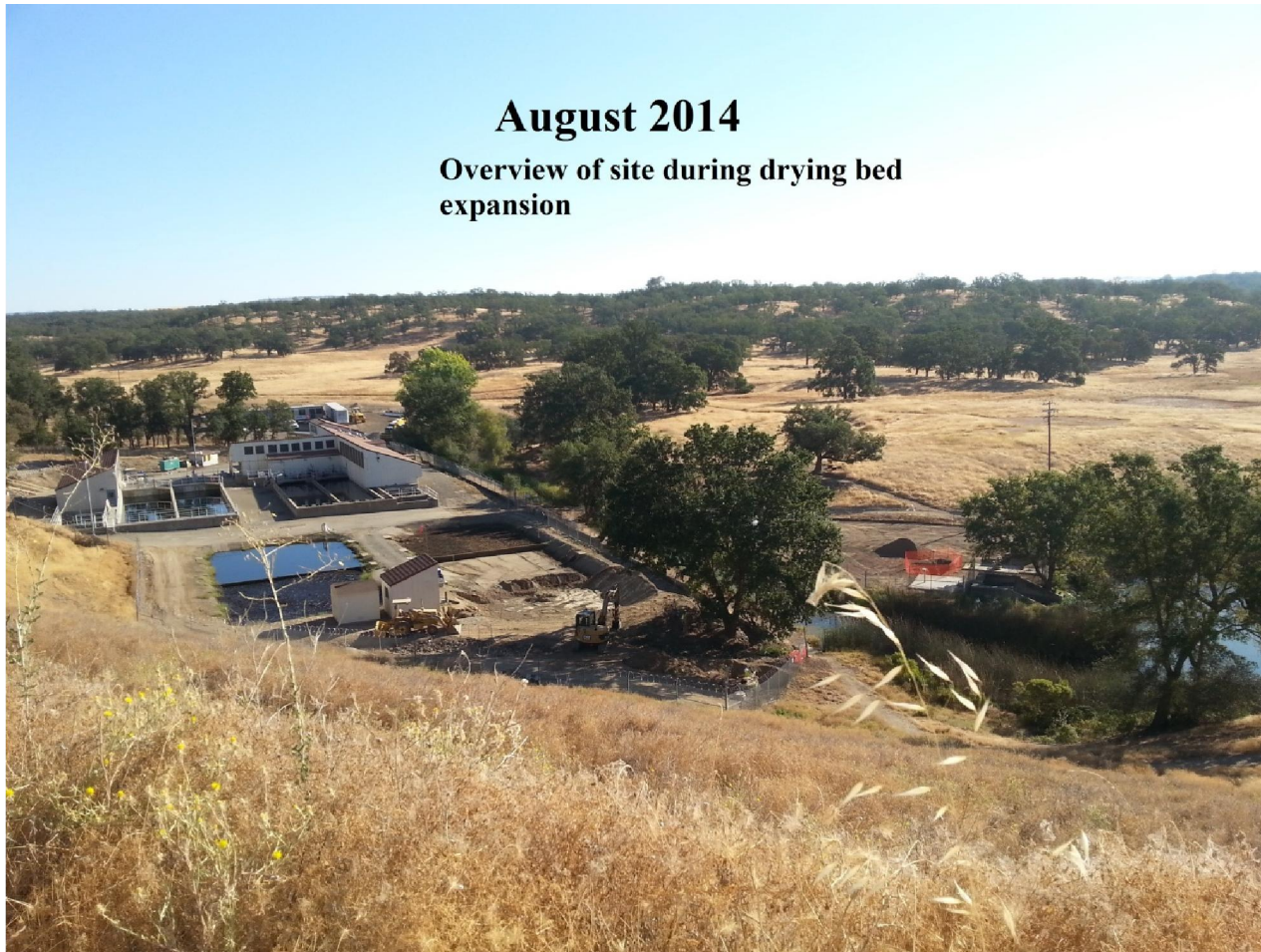




**Aerial
from
before
project**

August 2014

Overview of site during drying bed expansion



**Expansion of solids
removal drying beds**





Removing the filtration media from the Plant 1 filters

Demolition of Plant 1 filters



Demolition of Plant 1 filters





**Demolition of
Plant 1 filters**

**Demolition of Plant 1
water filters**





**Draining of Plant 1
sedimentation basin
after cleaning settled
sludge**





Beginning of Plant 1 sedimentation basin demolition

**Demolition of Plant 1
sedimentation basin
center wall**





**Installation of
chemical trench
vaults**



Electrical Conduits for new power feed

**Trench for Plant 1 flow
to Plant 2 chlorine
contact chamber**



**Sewer line installation from
Water Plant to sewer system**



**Overview of Water Plant- October 2014.
Drying bed expansion complete,
demolition of Plant 1 filter in process**





Installation of rebar for chlorine contact chamber expansion



Setting concrete forms for contact chamber expansion



Forming of membrane basins

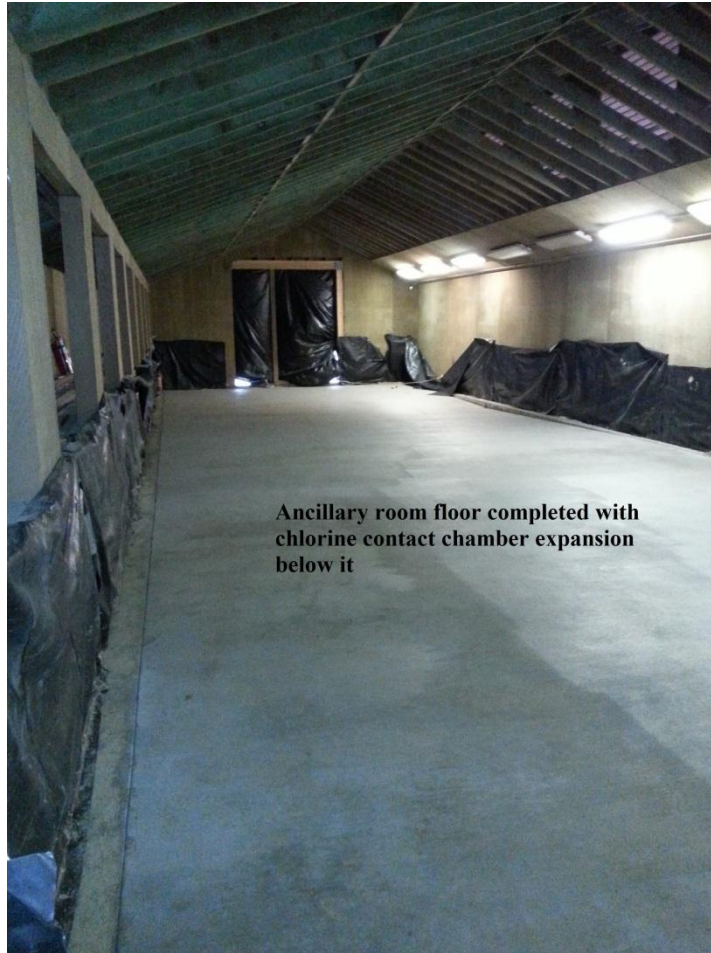




**Forming deck for
Ancillary room**

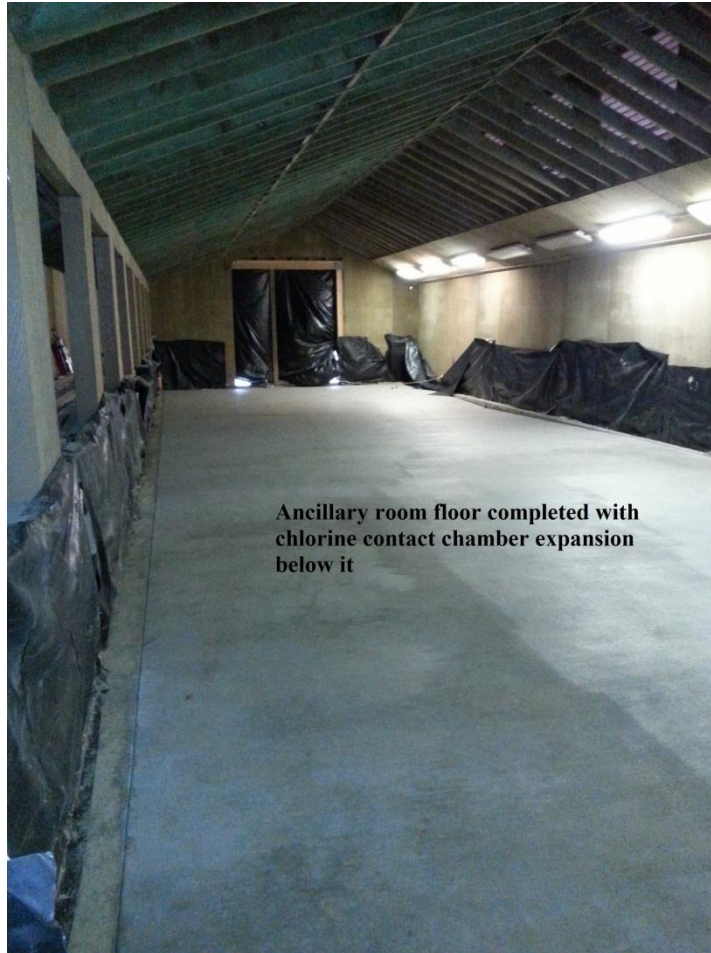


Setting rebar for membrane basins and canopy supports



Ancillary room floor completed with chlorine contact chamber expansion below it





Ancillary room floor completed with chlorine contact chamber expansion below it

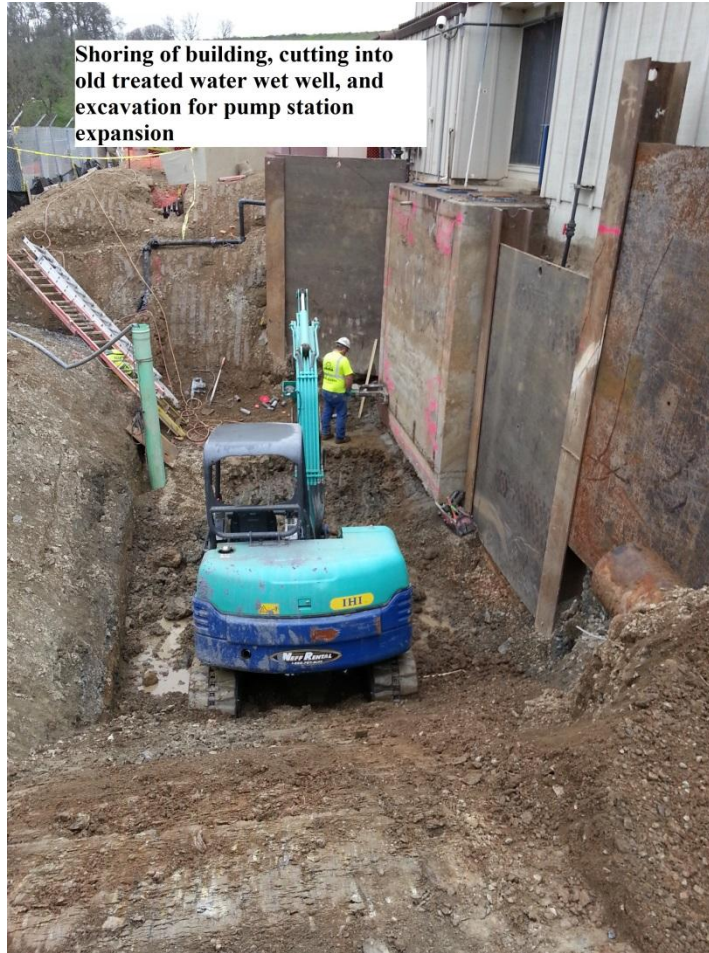
**Framing of electrical room
and cable tray installation
within Ancillary room**



**Setting forms for concrete pouring
of membrane basins**



Shoring of building, cutting into old treated water wet well, and excavation for pump station expansion



Excavation for Plant 1 water pump station expansion



Shoring of building, cutting into old treated water wet well, and excavation for pump station expansion



**Forming of
Backwash basin**



Ancillary Room - Electrical room nearly complete, with chemical feed equipment and compressors ready for installation





Excavation and shoring for installation of canopy support pilasters





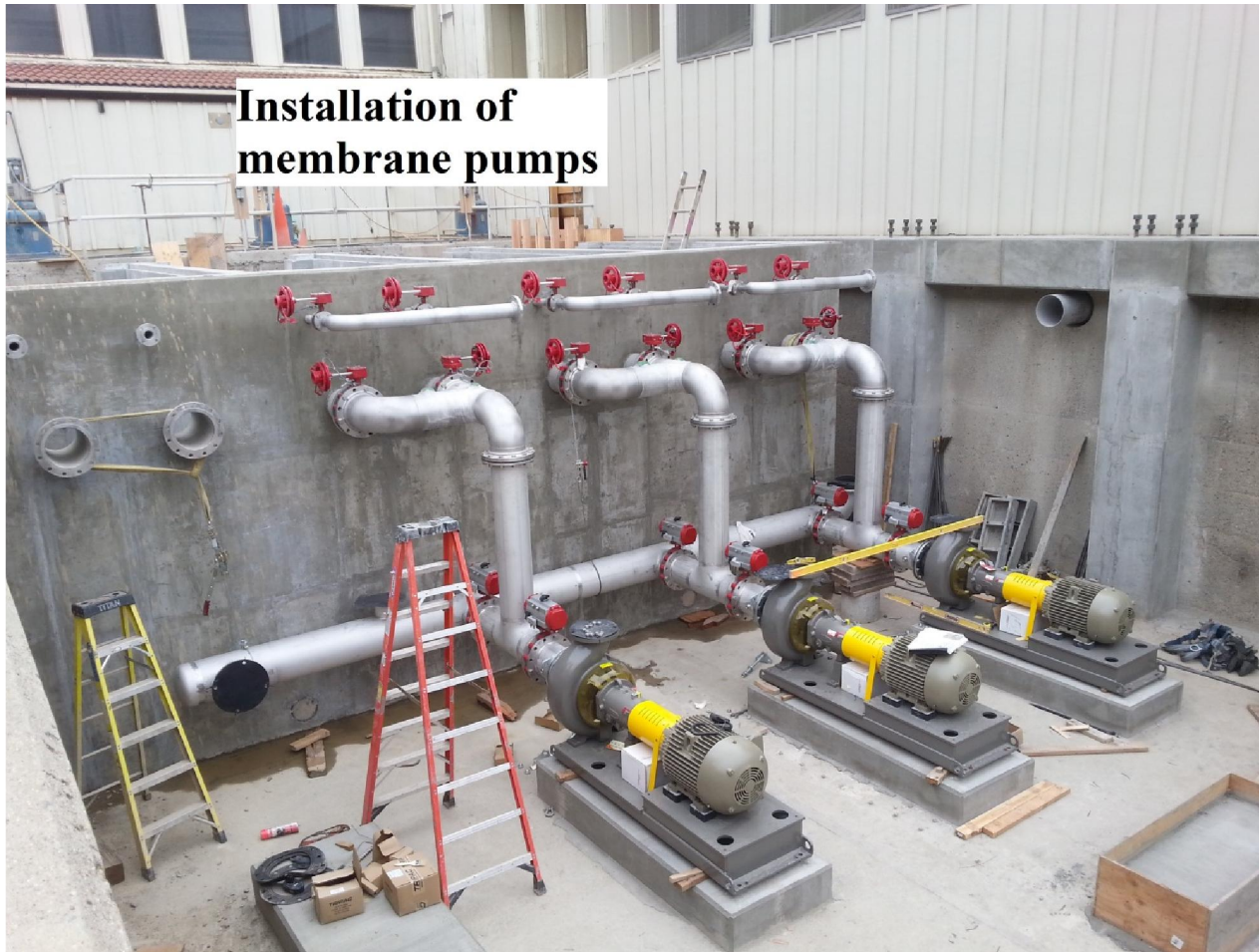


Setting forms for Treated Water Pump Station in preparation for pouring concrete

**Treated water pump
station expansion - wet
well completed**



**Installation of
membrane pumps**



**Installation of treated
water discharge line
and meter vault**



**Membrane pumps and
water lines**





Aerial overview during construction



Installation of canopy support beams

**Erection of
canopy framing**



June 2015

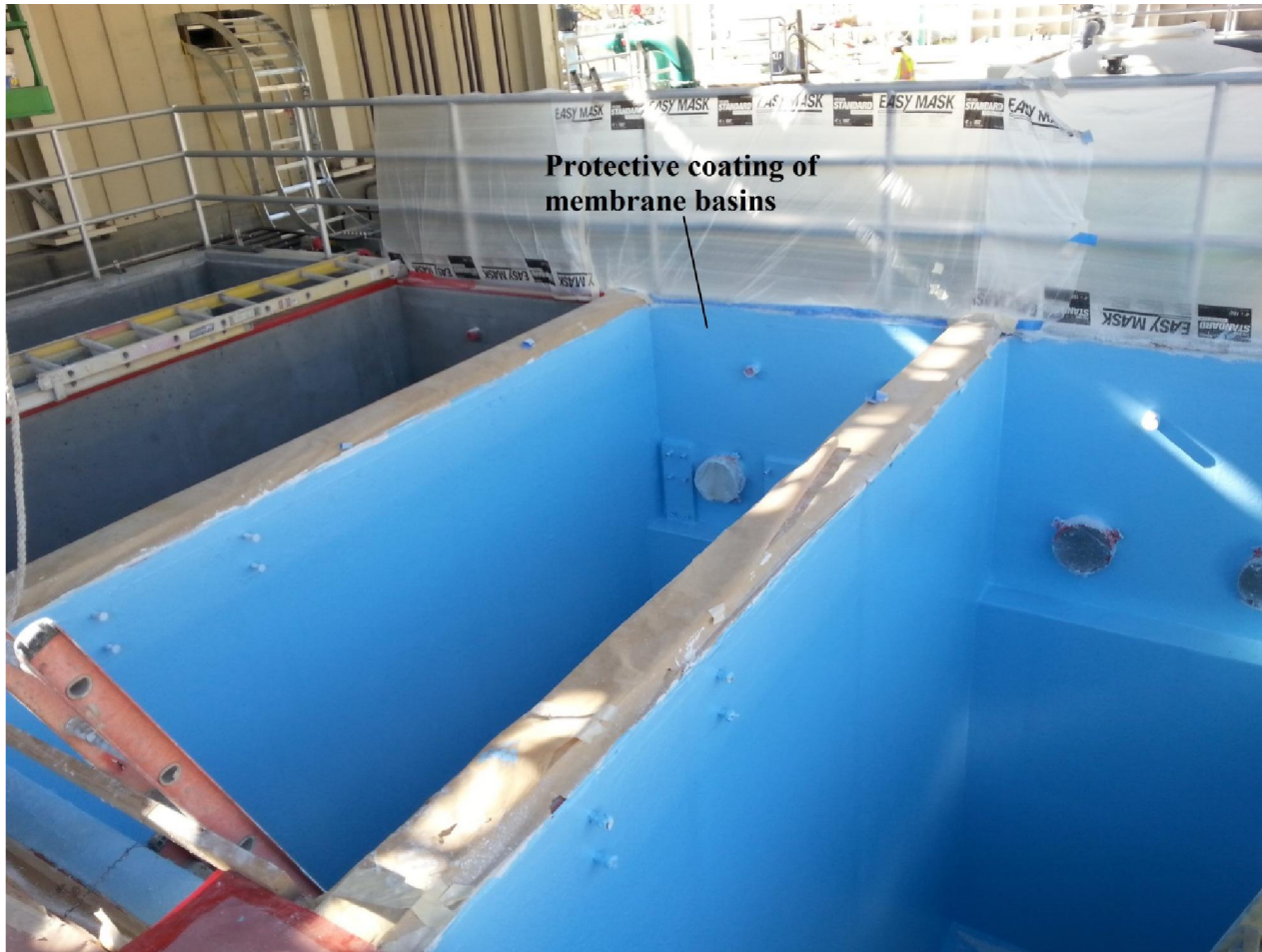


June 19, 2015





7/8/2015



**Protective coating of
membrane basins**

Air, water, electrical, & chemical lines for membranes





**View of
Membrane
treatment
equipment under
the canopy**

March 2016





**Ancillary Room
completed**



Completed treated water pump station

**Canopy structure complete
with bird netting installed**





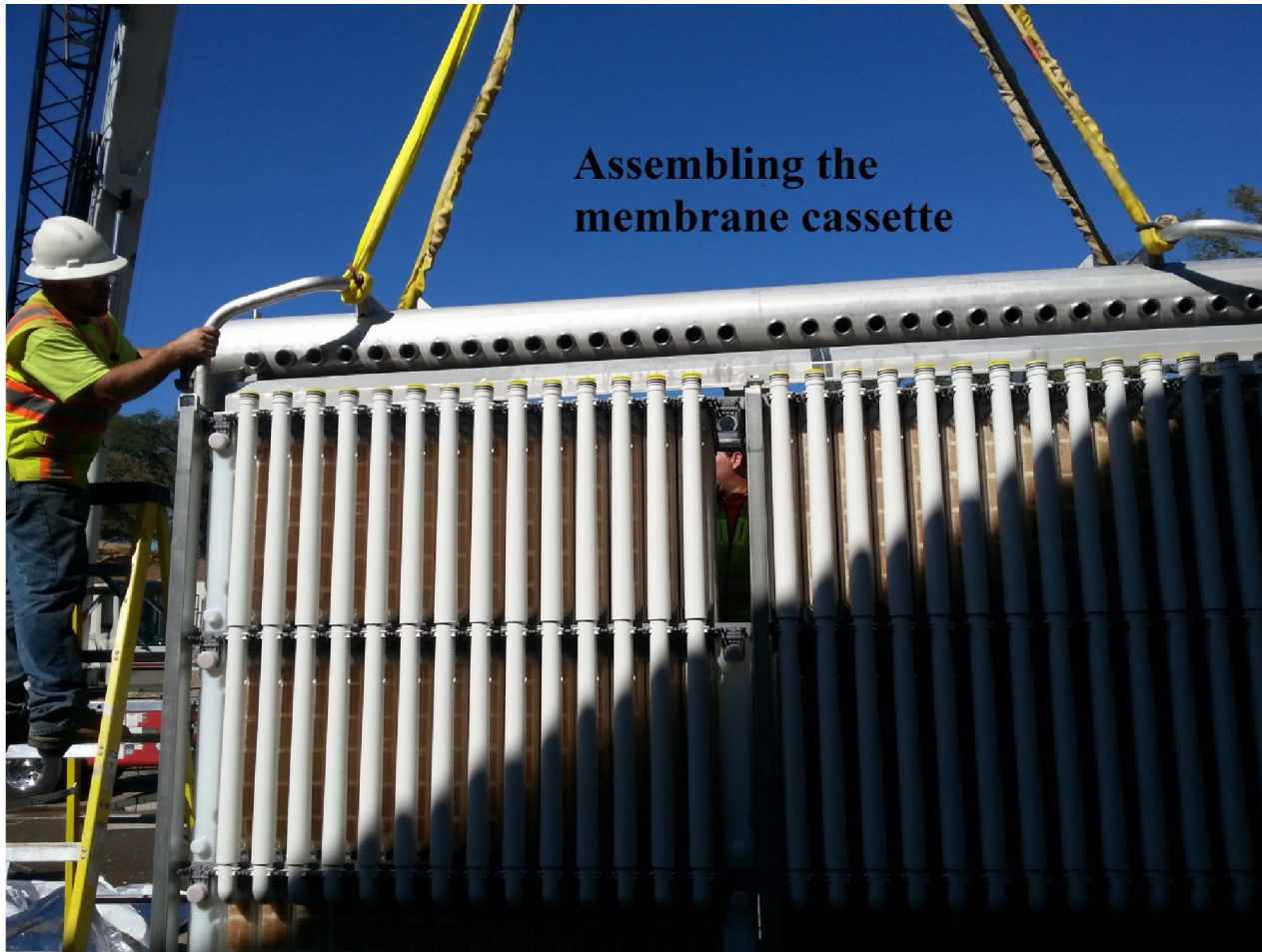
Raw Water feed line

Water line to Plant 2 contact chamber

Plate Settler for backwash processing

**Unpacking of
membrane
cassette**





**Assembling the
membrane cassette**



**Installation
of membrane
cassette**



Cassette being lifted with crane



**View of Cassette
with two membrane
modules removed**

**View of module's
membrane fibers**



**View of membrane fibers
set in potting material.
Flow is from outside to
inside of the membrane
fiber tubes.**





**Cross section of
membrane fiber**



Cost of Rancho Murieta CSD water - \$0.005 / gallon

(average residential usage of 1700 c.f. or *12,716 gallons*)

VS

a \$2 - 16oz bottled water = \$16 / gallon



Thank you for visiting