1.Dissolved Air Flotation Thickeners (DAFT)

Purpose: To thicken sludge and scum removed from liquid stream at CWWTP / WCWWTP.

1.) A combination of these solids are pumped from the transfer well at Central to the Splitter box at the DAFT area.

2.) Solids are mixed with highly saturated water and polymer to assist in floating the solids to the top of the tank .

3.) The thickened solids are then skimmed off the top of the tanks and pumped to the digesters.

2.Anaerobic Digesters

Purpose: Reduction and stabilization of volatile organic solids with the production of biogas.

1.) Thickened sludge from the DAFT tanks are pumped to each Anaerobic digester mix pumps. Mixing allows for the organic material to come in contact with the micro-organisms.

2.) The sludge is maintained at 95 degrees Fahrenheit (Mesophilic stage) through the use of heat exchangers.

3.) The micro-organisms break down the organic material into volatile acids and then to biogas.

3.Digester Gas and Sludge Storage

Purpose: Storage of gas produced through Anaerobic digestion.

1.) Digester gas is processed through foam separators for storage in Dystor membrane.
2.) The Dystor cover has two membranes, inner (gas storage) and outer (air padded system).
3.) Digested sludge overflows from primary digesters to this storage tank.
4.) Digested sludge is pumped from the storage tank to the centrifuge well for processing.

4. Digester Gas Utilization

Purpose: To use digester gas produced and stored.

1.) Digester gas is compressed and dried before use by the sludge dryers.
2.) Booster fans supply digester gas to the boilers.

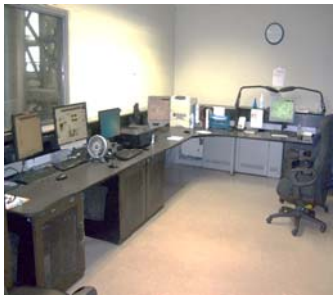
5.Waste Gas Flares

Purpose: Burns excess biogas not being used or stored.

1.) Flares are controlled by system gas pressure.
2.) No noticeable flame should be visible.

6.Control Room

Purpose: Central command center for plant operation.



1.) Technicians utilize (SCADA) Supervisory Control and Data Acquisition computers to control and monitor plant operation.

7.Centrifuges

Purpose: Dewater digested sludge to produce wet cake for sludge dryers.

1.) Digested sludge is pumped from the centrifuge well where polymer is added prior to the centrifuge.
2.) The centrifuge consists of a bowl and scroll turning in opposite directions.
3.) Centrifugal force separates the water to a drain and sludge cake to the wet cake bin.

8. Centrifuge Sludge and Polymer Feed System

Purpose: To supply sludge and polymer to centrifuges.

1.) Centrifuge sludge feed and mixing system.
2.) Polymer feed pumps and mixing tanks.

9. Sludge Dryers

Purpose: To evaporate moisture by heating the sludge to produced a Class A biosolid.

1.) Wet centrifuge cake and dried recycle pellets are mixed together prior to the sludge dryer.
2.) Mixed material enters the triple pass drum dryer to evaporate moisture.
3.) Pellets are separated from the gas stream, cooled and sent to the silo.
4.) A portion of the pellets are returned to the recycle bin.
5.) The gas stream moisture is removed by a condenser and cleaned by a venturi scrubber. The gas stream continues on to the RTO.

10. Regenerative Thermal Oxidizers (RTO)

Purpose: To destroy residual organic matter from the sludge dryer gas stream.

1.) The gas stream flows through ceramic tiled chambers heated to 1500 degrees Fahrenheit, destroying the particulate matter that cause odors.
2.) Exhaust gases are vented to the atmosphere.

11. Pellet Truck Loadout

Purpose: To remove pellets stored in Silo

1.) Technicians load Class A pellets into trailers for bulk land application.
2.) Pellets are coated with mineral oil to reduce dusting and aid in controlling product breakdown.