



## *In the Stream*

### Sandy Creek Generating Station

#### Lime Softening of Grey Water

Sandy Creek Generating Station is a nominal 900-MW coal-fired generating facility with a supercritical pulverized coal boiler, a tandem compound reheat steam turbine, a selective catalytic reduction (SCR) system, a dry scrubber and a baghouse. The plant was designed to be fired with Powder River Basin (PRB) coal. One unique aspect of this plant is that it was designed to use Grey water, treated domestic sewage, as the feed source for make up to cooling tower and for process use within the power plant.

Lime softening the grey water prior to plant, has many advantages. Most notably, it reduces the hardness in the water that makes it suitable for secondary treatment normally by reverse osmosis units. However, there are added benefits from lime softening in that it greatly reduces any iron or other heavy metals in the wastewater and can also kill any pathogens which might be remaining in the feed stream.

Once the water has been treated using lime softening, it is necessary to do a "re carbonization" step using either acid or CO<sub>2</sub> in order to bring the water back to a neutral pH. This prevents post precipitation of calcium and magnesium.

ClearStream, working with an OEM supplier, provided two 80' dia. Lime Softening Solids Contact Clarifiers each rated at 5,250 GPM and one 50' dia. Sludge Thickener. The OEM supplied the balance of the Water Treatment System including:

Three multi media filters each rated at 750 GPM, lime feeders, chemical feed systems, and sludge dewatering.

ClearStream's unique blend of flexibility, design expertise, experience, and value pricing, make us a strong affiliate for any Engineer, OEM, Contractor, or Customer looking to partner with someone to provide a water treating system.



Sandy Creek Generating Station



(2) 80' dia. Solids Contact Clarifiers and (1) 50' dia. Sludge Thickener

ClearStream offers a complete line of equipment for municipal, industrial, power, and mining water and wastewater applications.

## **Headworks**

Titan Detritors™ Grit Removal

## **Sedimentation Equipment**

Segmented Rake, Plow Style

Spiral Blade Design

Suction Header Clarifiers

Suction Pipe Clarifiers

Solids Contact Clarifiers

RapidStream™ - High-rate Solids Contact  
Clarifier / Thickeners

Rim Drive Clarifiers

Thickeners

## **DAF Units**

Circular

Rectangular

## **CPI Type Oil/Water Separators**

Rectangular

Packaged

## **API Type Oil/Water Separators**

Rectangular

Circular

## **Walnut Shell Filters**

Standard

Custom

## **Anaerobic Digester Covers**

Buoyant Truss Steel Covers

Gasholder Truss Steel Covers

Radial Beam Fixed Steel Covers

Radial Beam Gasholder Steel Covers

Dual Membrane Gasholder Covers  
(Tank Mounted / Slab Mounted)

## **Biological Process Equipment**

ClearFlo™ Jet Aeration Systems

ClearFlo™ Bullseye Oxidation Channel™

ClearFlo™ Sequencing Batch Reactors

ClearFlo™ Continuous Loop Reactors

ClearFlo™ DitchDr™ Optimization  
/ Retrofits

## **Trickling Filters**

Mechanically Driven Distributor Arms

Hydraulically Driven Distributor Arms

## **PRE™ Heavy Duty Drives (New and Replacement)**

Column Mounted Cage Drives

Bridge Mounted Shaft Drives

Dual Cage Drives

Dual Shaft Drives

Cage Drives with Lifts

Shaft Drives with Lifts

Multi-Pinion Cage Drives

Multi-Pinion Shaft Drives

Direct Cage Drives

Direct Shaft Drives

Hydraulic Drives

Rim Drives

## **Field Service and Training**

## **Retrofit Service**

## **Tankage and Erection**

## **Process Audits**



Learn More



Water & Wastewater Treatment Solutions