

# HISTORY

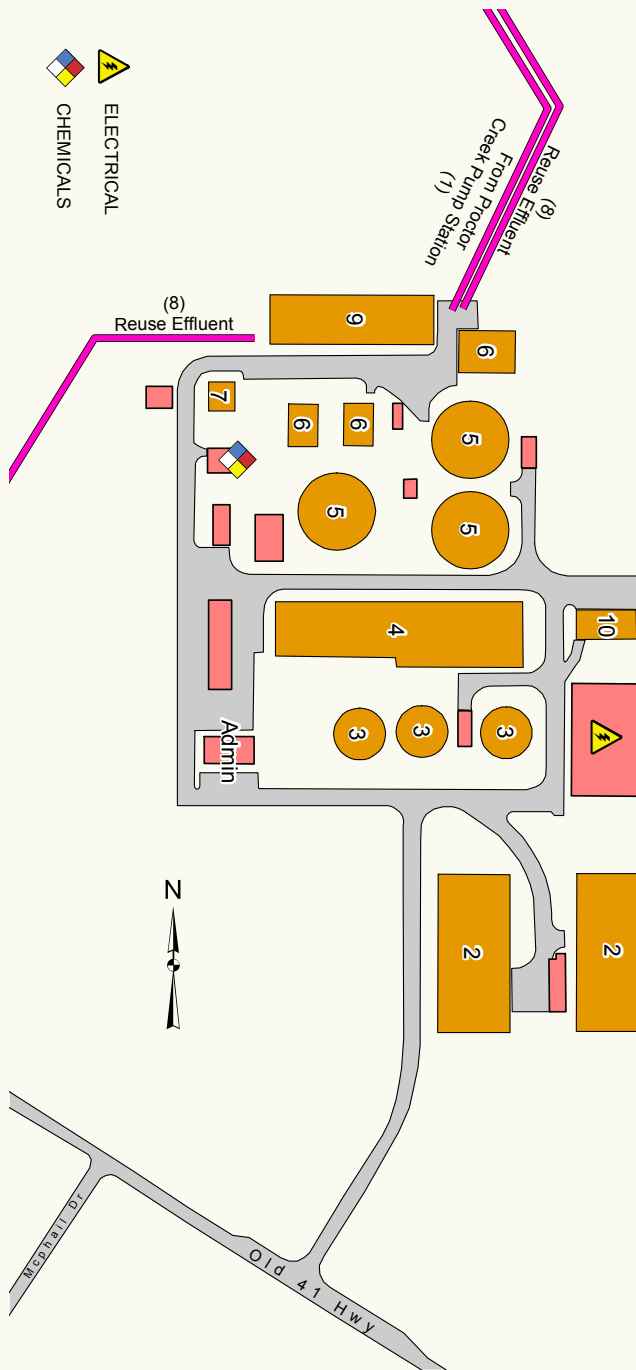
Clean water is for everyone. We use it every day in our homes, schools, and businesses. Wastewater is collected in sewer pipes and through a series of pipes is transmitted to water reclamation facilities where it is cleaned and treated before it is released back into the environment, for us to enjoy again.

Since 1987, the Northwest Cobb Water Reclamation Facility (WRF) has been treating wastewater from northwest Cobb County and portions of Bartow and Cherokee Counties.



The Northwest WRF is located near Proctor Creek and provides advanced treatment to wastewater generated in the northwest quadrant of unincorporated Cobb County; the cities of Acworth and Kennesaw; and portions of Bartow, Cherokee and Paulding counties. The facility reclaims wastewater, producing reuse-quality water that is either discharged to Lake Allatoona through an underwater diffuser or provided to several urban reuse customers for irrigation purposes.

When built, the plant was sized to treat 2 million gallons per day (mgd), then upsized to 4 mgd in 1988. In 1997, the plant capacity was doubled, to a capacity of 8 mgd. The facility was again expanded in 2008, with an expanded capacity of 12 mgd.



# NORTHWEST COBB

## WATER RECLAMATION FACILITY



3740 OLD 41 HIGHWAY  
KENNESAW, GEORGIA • 30144

# PRIMARY TREATMENT

# SECONDARY TREATMENT

# TERTIARY AND SOLIDS TREATMENT

## 1 • INFLUENT PUMP STATION

The plant's incoming flow is received at the off-site Proctor Creek Pump Station located approximately 3/4 of a mile north of the facility on the west side of Old 41 Hwy. The station receives raw wastewater from 30-inch and 36-inch interceptors. The flow from the two interceptors enters the pump station, passes through one of the two mechanical bar screens, then collects in a wet well. Next, four influent pumps pump the raw wastewater through one (or both) of two parallel 24-inch and 30-inch force mains to the Northwest WRF to begin the treatment process.

## 2 • GRIT CHAMBERS/EQUALIZATION BASINS

Four rectangular grit chambers allow granular debris to settle at the bottom of the chamber. Prior to entering the grit chambers, ferrous chloride is added to the inflow to aid in settling downstream through the primaries. The settled debris is removed from the bottom of the channel with a chain and bucket type mechanism for off-site disposal.

During high peak flows into the facility, one of the four equalization basins are utilized to store wastewater to better regulate the flow. The objective of equalization is to minimize or control fluctuations in wastewater in order to provide optimum conditions for subsequent treatment processes.



## 3 • PRIMARY CLARIFIERS

Three 70-foot diameter concrete tanks separate out the scum and primary sludge. Scum is collected from the surface while settled solids are swept off the bottom. Both are discharged to the *Sludge Holding Tanks* in the solids treatment process. Lime (to raise pH) is then added to the primary effluent in preparation for biological treatment. The liquid stream then flows to the *Aeration Basins*.

## 4 • AERATION BASINS

Biological treatment is used to further remove solids and dissolved waste from the liquid stream. Blowers pump air into the liquid stream through fine bubble diffusers in eight basins to maintain an aerobic environment for bacteria to consume the organic compounds and remove ammonia.

Poly-Aluminum Chloride (PAC) (a chemical to aid in settleability) is added to the liquid stream as it flows out of the aeration basins to the *Secondary Clarifiers*.

## 5 • SECONDARY CLARIFIERS

Three 110-foot diameter concrete tanks separate the biological solids from the liquid stream by providing an opportunity for the solids to settle to the bottom of the tanks.

Most of the settled solids, called return activated sludge (RAS), are pumped back to the *Aeration Basins* for continued biological activity. The remaining biological solids, known as waste activated sludge (WAS), are pumped to the *Sludge Holding Tanks*. The main portion of the liquid stream flows to the *Effluent Filters*.

## 6 • EFFLUENT FILTERS

Eight automatic backwash sand filters remove most of the remaining fine particles from the liquid stream as it percolates through granular media (sand & anthracite). The liquid stream then flows to the disinfection process.

## 7 • ULTRAVIOLET DISINFECTION

Bacteria in the wastewater are killed as the liquid stream passes through closed vessels containing high intensity lamps emitting ultraviolet light.

## 8 • REUSE EFFLUENT

The effluent is pumped by vertical turbine pumps through a 7.5 mile long force main to an underwater discharge point in Lake Allatoona. The reuse-quality treated effluent is also distributed locally on an as-needed basis to three reuse customers for golf course and athletic field irrigation.

## 9 • SLUDGE HOLDING TANKS

Primary and WAS sludge are stored in eight aerobic holding basins. The sludge is aerated and mixed in the basins before being pumped to *Solids Handling*.

## 10 • SOLIDS HANDLING

Belt filter presses are utilized to dewater the biosolids generated at the plant. Polymer is added to the sludge to aid in coagulating the solids for processing. Four filter presses squeeze water from the sludge using pressure. The presses are arranged to discharge to a single conveyor which transfers the dewatered sludge to trucks for off-site landfill disposal.



30% Recycled Content