MIAMI-DADE WASTEWATER TREATMENT PROCESS

The continuous delivery of excellent and reliable wastewater services in compliance with all regulatory requirements.

**PRE-TREATMENT**
Upon arriving at the WWTP, the water enters the pretreatment process.

- **Influent Screens** – Large solids such as plastics, wood, and rags are removed.
- **Aerated Grit Chamber** – Small particles such as sand, pebbles and grit are removed.
- **Settling Tank** – The bacteria from the oxygenation basin, known as activated sludge, settles to the bottom of the tank. Part of this bacteria is returned to the oxygenation basin as helpful bacteria. The remaining sludge is sent to the solids handling process explained below. The treated water is removed from the top of the tank and sent to the next treatment process.

**SECONDARY TREATMENT**

- **Oxygenation Basin** – Oxygen is introduced in the wastewater to promote the growth of helpful bacteria that consumes the organic matter in the wastewater.
- **Activated sludge** – Sludge is compacted by settling to the bottom of the thickening tank.
- **Sand Filter** – The clean water is pumped to a sand filter where any remaining particles are removed.

**TERTIARY TREATMENT**

- **Chlorine Contact Basin** – Chlorine is added to disinfect the water and neutralize harmful bacteria.
- **Bio gas to energy recovery** – The biogas is refined and used to produce electricity and heat for the treatment plant.

**SOLIDS HANDLING**

- **Sludge Thickening** – Sludge is compacted by settling to the bottom of the thickening tank.
- **Sludge Digestion** – Bacteria consumes the thickened sludge and in the process generates biogas (methane and carbon dioxide). The biogas is refined and used to produce electricity and heat for the treatment plant.

**EFFLUENT DISPOSAL**

- **Effluent Pump Station** – Treated effluent is pumped to deep injection wells.
- **Deep Injection Wells** – Treated effluent is disposed approximately 2,800 feet below the earth’s surface, within a confined geological zone.
- **Overflow to the beginning of plant**

**NOTE:** Some processes vary throughout the Miami-Dade wastewater treatment plants. There are two ocean outfalls where the treated discharge will be reduced 95% by 2025.