

The seal of the County of Henrico, Virginia, is a circular emblem. It features a central figure of a woman in profile, facing right, holding a quill pen. The text around the inner border of the seal reads "CITY 1611 • SHIRE 1634 • MANAGER 1634 • COUNTY OF HENRICO, VIRGINIA".

County of Henrico
Energy Generation at County Facilities

January 31, 2013

Springfield Road Sanitary Landfill

INGENCO Plant



Springfield Road Sanitary Landfill

- > Gas collection system is comprised of 106 wells
- > Landfill produces 900 cubic feet per minute of landfill gas, with a methane content of approximately 45% to 50%
- > INGENCO, based in Henrico County, built a 4 Mega Watt power plant on site
- > Gas collected produces electricity that is sold to the electric power grid
- > In 2012, the landfill produced approximately 358,000,000 standard cubic feet (scf) of landfill gas of which 229,000,000 scf was used by INGENCO to produce electricity (approximately 64%)
- > Enough electricity is produced to supply approximately 3,000 homes
- > Revenue collected by County in 2012: \$172,000

Springfield Road Sanitary Landfill

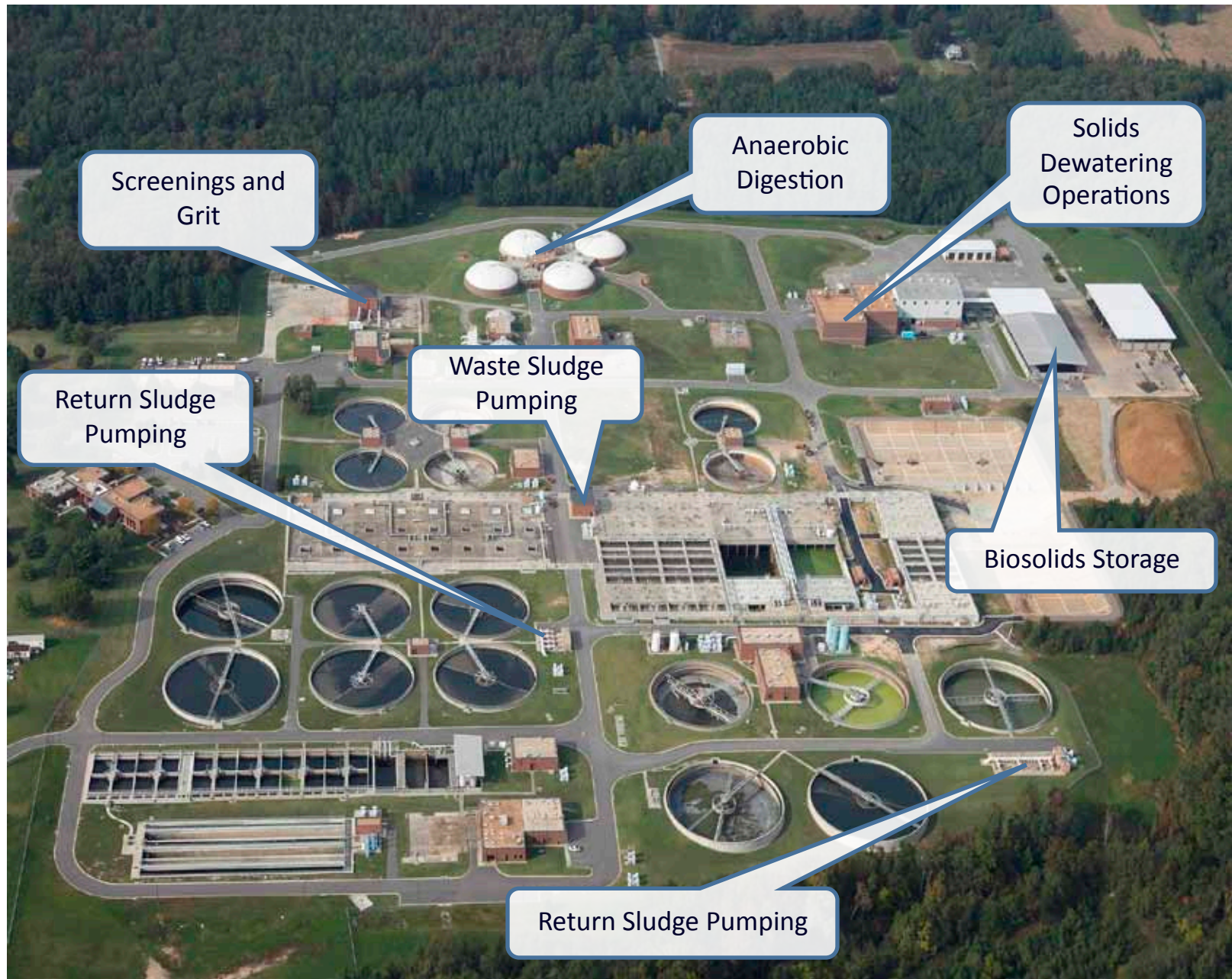
County Benefits

- > **Revenue** — payments to Henrico County range from \$170,000 to \$180,000
- > **Create Jobs** — 2 full time staff at the plant during operation
- > **Henrico based company** — assemble overhauled engine units and controls

Regional Benefits

- > **Energy Source** — 4 Mega Watt plant can power approximately 3,000 homes in region

Water Reclamation Facility



Anaerobic Digesters

- > This system consists of four anaerobic digesters each equipped with a dual membrane, air pressurized gas-holder covers
- > The “digestion process” utilizes microorganisms to break down the solids and kill pathogens
- > During the digestion process, solids (biomass from the liquid treatment process) are held at 97 °F for about 28 days. During this process, specialized micro-organisms effectively convert the solids to water, gas and inert material



Anaerobic Digester at the
Water Reclamation Facility

Anaerobic Digesters

- > Digester gas is approximately 65% methane and 35% carbon dioxide. Thirty percent of the gas is used as a fuel source to heat the 4 digesters and 5 of the buildings at the facility
- > Methane that is in excess of what the plant can use is “flared” through a waste gas burner (see picture below)



Water Reclamation Facility

County Benefits

- > **Energy Source** — Approximately 30% of anaerobic digester gas is used to heat 4 digesters and five buildings at the facility
- > **Savings** — By utilizing methane gas instead of fuel oil, Public Utilities saves approximately of \$2,800 per day in fuel oil costs



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