

Holden Beach Sewer System

March 2016

How Does It Work?

How AIRVAC Works:

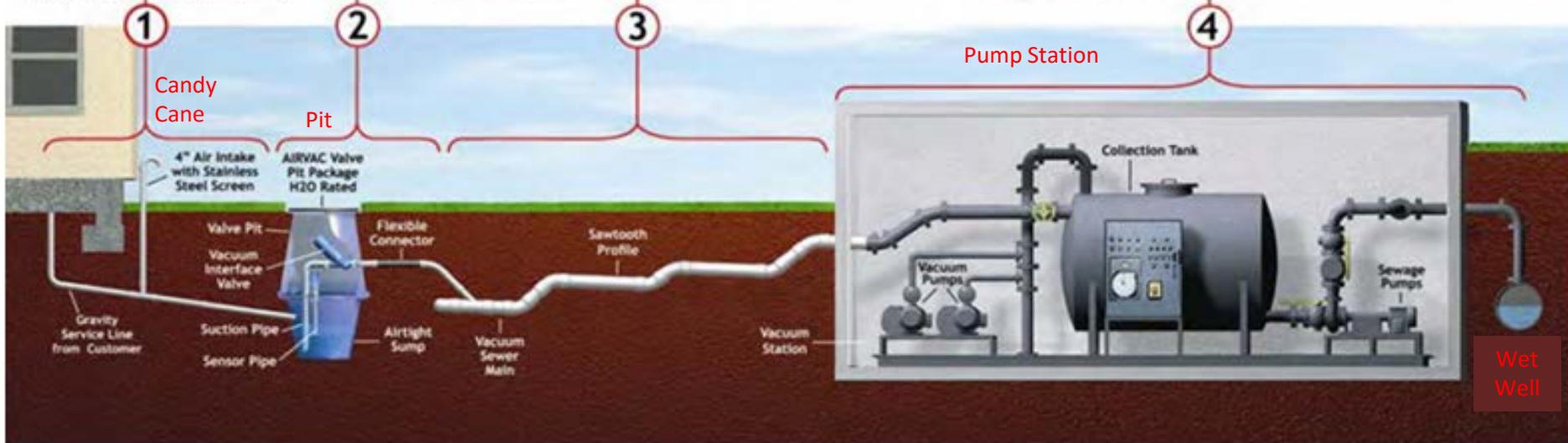
1 A traditional gravity line carries wastewater from the customer to an AIRVAC valve pit package.

2 When 10 gallons of wastewater collects in the sump, the AIRVAC valve opens and differential pressure propels the contents into the vacuum main.

3 Wastewater travels at 15 to 18 fps in the vacuum main, which is laid in a sawtooth fashion to insure adequate vacuum levels at the end of each line.

4 Wastewater enters the collection tank. When the tank fills to a predetermined level, sewage pumps transfer the contents to the treatment plant via a force main.

Vacuum pumps cycle on and off as needed to maintain a constant level of vacuum on the entire collection system.



The drains and toilets in your house flow by gravity into the **Pit** buried in your yard. Typically, two houses share one **Pit**. There are 1,300 pits on the island.

When the **Pit** starts to fill up, pressure triggers a valve to fire open and the contents are sucked into the vacuum pipe that goes down your street. When this happens, the **Candy Cane** in your yard acts as a vent to keep the vacuum from damaging the pipes in your house. The vacuum pipe flows to a **Pump Station**.



New Pit (not installed)



Installed Pit



Candy Cane

Top of Pump Station

There are four pump stations on the island; two of them are also **Lift Stations** with wet wells and additional **Sewage Pumps**.



Top of Pump Station

Stairs Down to
Pump Station



Vent

Underground Pump Station

This is the equipment that is underground in the **Pump Station**.

Collection Tank

(2) Sewage Pumps
(hidden)

Stairs Up
To Outside

(2) Vacuum
Pumps

Electrical
Panels

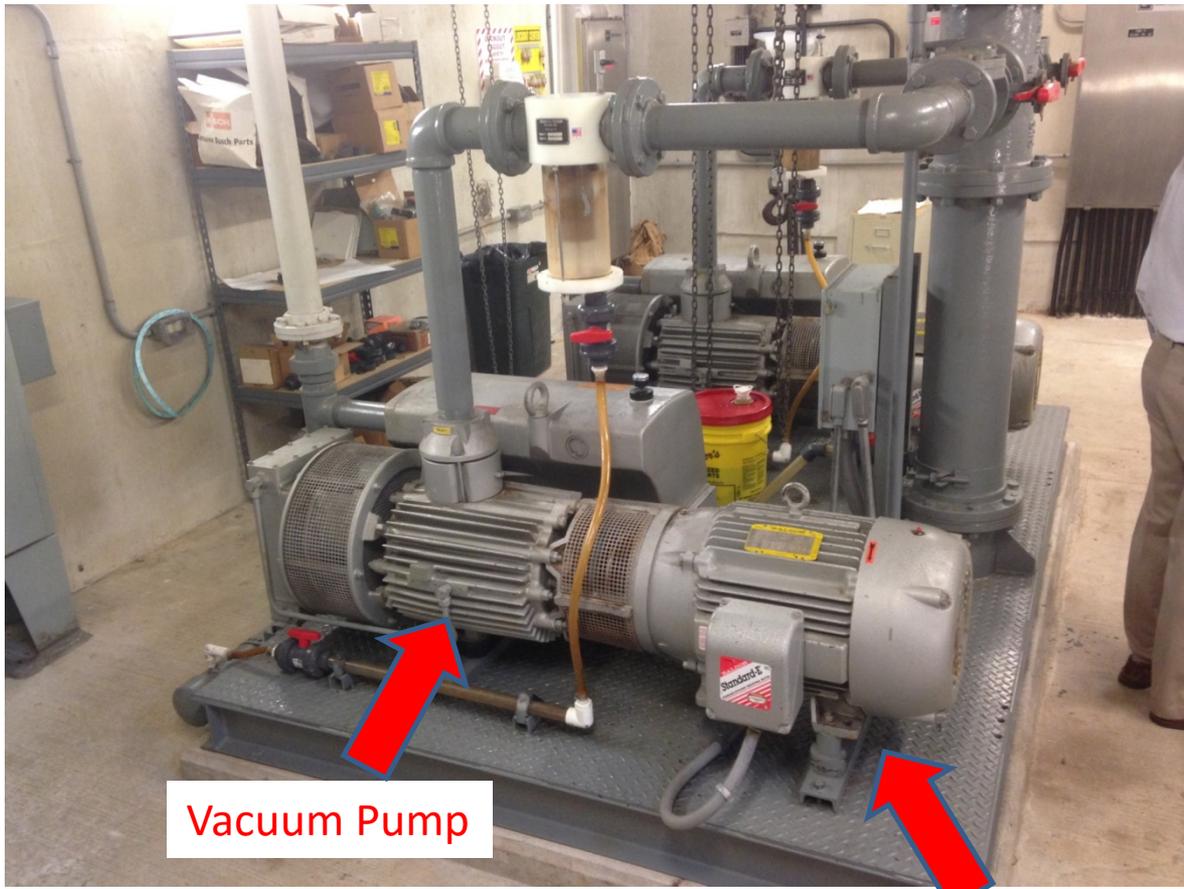


Collection Tank

The vacuum pipes in the street go to the **Collection Tank** in the **Pump Station**.



Vacuum Pumps



Vacuum Pump

Electric Motor

The vacuum in the pipes and **Collection Tank** is maintained by the **Vacuum Pumps** that are run by electric motors.

Sewage Pumps



Collection
Tank

The **Collection Tank** is emptied by **Sewage Pumps** run by electric motors that pump the sewage down pressure pipes to a wet well at the **Lift Station**.

Additional **Sewage Pumps** at the **Lift Station** then pump the sewage from the wet well to off the island, where it then flows by gravity to the treatment plant in Supply.

Electrical Panels



Electrical Panels contain the switches and controls for the **Vacuum Pumps** and **Sewage Pumps**. The panels contain many electrical components