

RIO VISTA WASTEWATER TREATMENT PLANTS

2010-11 Solano County Grand Jury

I. SUMMARY

The City of Rio Vista operates two separate wastewater treatment plants. These plants are maintained and operated by Veolia Water. Operating two wastewater treatment plants in a city the size of Rio Vista is a burden for the taxpayers. The City should develop a plan to combine the Beach Drive plant's collection system with the Northwest plant's wastewater treatment system. Combining the systems would better utilize the maximum capacity of the Northwest plant and allow the City to retire the more costly and less efficient Beach Drive plant.

The City of Rio Vista currently has no plan for the reuse of bio-solids produced during wastewater processing at the City's two plants. Instead of transporting bio-solids to a landfill, their sale to the agricultural industry could generate revenue to offset the cost of operating the wastewater treatment plants. In addition, processed wastewater could be used for many reclaimed water uses and reduce the usage of potable water. At the present time there is no plan for usage of this reclaimed water. The City should develop a plan to find ways of using these two by-products of the wastewater treatment plants.

The City should develop a plan to install some form of alternative energy production at the Northwest plant. The use of alternative energy production, such as solar or wind, could reduce the operating cost of this plant. The funds for this project could come from Federal grants aimed at promoting the use of alternative energy systems.

II. INTRODUCTION

Rio Vista has two wastewater treatment plants. The older is the Beach Drive plant which opened for operation in 1972 and served a population of approximately 3,000. The newer plant, the Northwest plant, opened for operation in 2005, was privately built to serve the Trilogy development, and it now serves a portion of other areas, including Liberty, Riverwalk, and Del Rio Hills. The population of the Trilogy development is now approximately 3,500. Since 2005 the two plants have been operated under a contract with Veolia Water, a private company that is responsible for operation and maintenance of the plants. The City took over ownership of the Northwest plant from the developers in 2007.

According to Rio Vista City Management, National Pollutant Discharge Elimination System (NPDES) issued the Beach Drive plant a permit in 2008 and the Northwest plant in 2010. The California Regional Water Quality Control Board Central Valley Region monitors discharges to ensure the NPDES-permitted facilities operate within the permit limits. Both plants have a history of permit violations. Since Veolia Water took over operation and maintenance, the number of permit violations has diminished.

Due to naturally-occurring high levels of aluminum in the groundwater, the Northwest plant exceeded permit levels for aluminum. In September 2010, NPDES relaxed the Northwest plant's permit aluminum levels from 71µg/l (micrograms per liter) to 443µg /l. The plant now operates within its permit level.

III. METHODOLOGY

The Grand Jury:

- Reviewed Solano County discharge violations on the California Water Quality Control Board website
- Reviewed information provided by the City of Rio Vista
- Interviewed Veolia Water staff
- Toured both plants with staff
 - Inspected the Northwest plant's administration office, laboratory, and process plant
 - Inspected the Beach Drive plant's control room, laboratory, and process plant
 - Received explanations of the processes involved treating the wastewater at each plant.

IV. STATEMENT OF FACTS

The Northwest plant has an up-to-date process control system and energy-efficient equipment. The Beach Drive plant operating systems are upgraded as funds become available, but have not yet reached the cost-effectiveness of the Northwest plant. The average flow rates for the two plants are:

	Beach Drive Plant	Northwest Plant
Average flow rate (GPD*)	185,000	200,000
Maximum design flow capacity (GPD*)	650,000	1,000,000

*GPD = Gallons per Day

The wastewater flowing into the Northwest plant is all residential while wastewater flowing into the Beach Drive plant is from residential, commercial, and industrial sources.

The primary cost involved in operating the facilities is labor. The current annual contract for operation and maintenance of these facilities is approximately \$1,100,000, which does not include fluctuating costs of treatment chemicals, maintenance materials, and electrical power. The plants' staff is comprised of one administrator, three level-five operators, one level-one operator, and one operator-in-training.

The Northwest Plant has three collection system lift stations with electrically-operated pumps. Six similar stations serve the Beach Drive plant wastewater collection system, which increases its maintenance and operating costs due to its age and condition. At the time of this investigation, sewer fees for the Beach Drive plant were higher than those for the Northwest plant. According to Veolia staff, if the Beach Drive collection system were connected to the Northwest plant at a future date, then the fees could be equalized.

Veolia Water staff stated the City of Rio Vista is now in the process of developing sanitary sewer and stormwater plans, and it intends to publish them during July 2011. The Grand Jury is uncertain whether these plans will address the situation of having two separate wastewater collection systems. According to Veolia Water staff, a separate study would need to be conducted to assess the costs of combining the two wastewater facilities.

Several California cities have systems using reclaimed wastewater where non-potable water can be used for landscaping, irrigation, and maintenance. According to Veolia Water staff, the City of Rio Vista had no plan for usage of reclaimed wastewater at the time of this investigation. Rio Vista City Management evaluated the cost for use of reclaimed wastewater and determined that it was too cost-prohibitive at this time.

Veolia Water has a data acquisition system at the Northwest plant and has recently started a similar system at the Beach Drive plant. The collected data are used for research in the development of new wastewater treatment processes and could influence the development of the sanitary sewer and stormwater plans.

Both plants produce bio-solids during the processing of wastewater. Bio-solids are divided into two categories: Class A (virtually pathogen-free, approved for application on human food crops) and Class B (contains reduced number of pathogens).

The Class B bio-solids produced at the Beach Drive plant are trucked to the Northwest plant for processing, which is an extra cost to the City. In addition, all the bio-solids from both plants are trucked to a landfill for disposal. According to Veolia Water staff, the City currently has no plans for the sale or reuse of these bio-solids.

According to Veolia Water staff, the Northwest plant has an area that could be used for some form of alternative energy production, solar or wind. They also stated this electrical energy could be used to offset the power used by the process at the plant, which is one of the largest costs involved with the treatment of wastewater.

V. FINDINGS AND RECOMMENDATIONS

Finding 1—At this time there are no plans for the sale or reuse of the bio-solids produced during the wastewater treatment process at each plant.

Recommendation 1—These bio-solids could be sold to be processed for agricultural use. This could generate funds to offset the cost of operating the plants.

Finding 2—There are several cities in California that now use reclaimed wastewater to offset the use of potable water. Rio Vista City Management evaluated the cost for use of reclaimed wastewater and determined that it was too cost-prohibitive at this time.

Recommendation 2—The City of Rio Vista should reconsider developing ways of using reclaimed wastewater produced by its plants.

Finding 3—Operating two wastewater treatment plants in a city the size of Rio Vista is a burden for the taxpayers of the City.

Recommendation 3—The City of Rio Vista should consider developing a plan to connect the Beach Drive plant’s collection system to the Northwest plant’s wastewater treatment system.

Finding 4—The Northwest plant does not currently produce alternative energy, such as solar or wind. Use of alternative energy production could reduce the operating cost of the Northwest plant.

Recommendation 4—The City of Rio Vista should consider developing a plan to install some form of alternative energy production at the Northwest plant. The funds for this project could come from Federal grants aimed at promoting the use of alternative energy systems.

COMMENTS

- The Solano County Grand Jury commends the Veolia Water staff for operating clean and well-run wastewater treatment facilities.
- Subsequent to our investigation, it came to the attention of the Grand Jury that in the next few years, regulations will change so that only Class A biosolids may be applied to land in Solano County (unless the generator can meet certain Solano County regulations).

REQUIRED RESPONSES

City of Rio Vista Mayor and Council members
Rio Vista City Manager

COURTESY COPIES

Veolia Water