

New state-of-the-art water plant goes online for city of Iola

In 1930, the city of Iola had to replace its original water plant at a cost of approximately \$87,000. The new plant was built due to orders from Kansas Department of Health and Education (KDHE) to stop producing water from the old water plant for health reasons. The 1930 vintage plant still has operators controlling processes 24 hours a day; its capacity is two million gallons per day (MGD). The plant uses chlorine as its primary disinfectant to treat raw water from the Neosho River. Lime, soda ash, and aqua ammonia are some other chemicals used to treat the water from the river. All of this is about to change as the city of Iola brings a brand new water plant into service.

Gary Armentrout
Tech Assistant

Toby Ross, Iola water/wastewater plant superintendent, says, "that due to the new EPA requirements to meet Safe Drinking Water Act regs under the Stage 1 Disinfectants and Disinfection Byproducts Rule (DPBR), the city of Iola decided to build." They



contracted with PEC Engineers of Topeka to design a new treatment plant with Bruce Allman as PEC manager. A ground-breaking was held in June, 2003, with BRB Contractors of Topeka as general contractor and Charles Landwehr project manager. The new plant will cost approximately \$10.7 million and is being financed through the Kansas Public Water Supply Loan Fund administered by KDHE. In anticipation of the debt to be incurred, the city of



Iola treatment plant's new administration building will house a lab, filters, training room and administrative offices.

Iola increased water rates far in advance of the project.

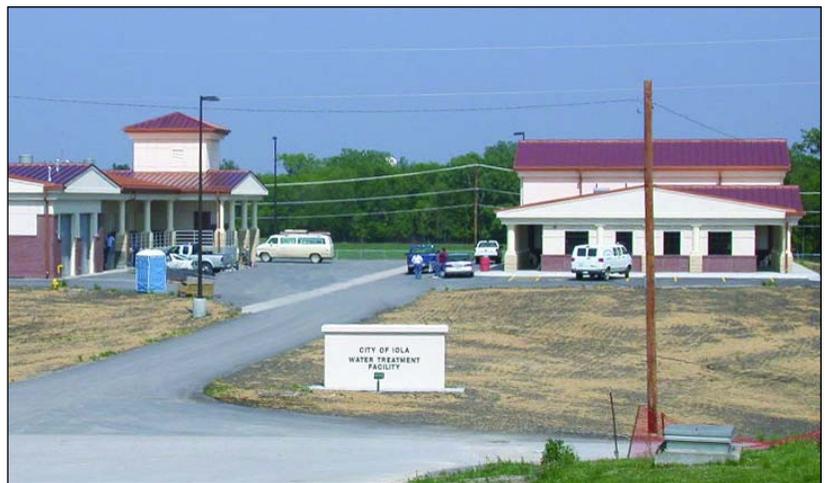
The city's water source will continue to be from the Neosho River. But rather than treat the

water with chlorine, the primary disinfection will come from an ozone system built by Ozonia of North America. The ozone and the DensaDeg System, used for pre-sedimentation and disinfection is housed in one building while the lab, training

room, filters, and administrative offices will be in the main building.

The DensaDeg system is a high-rate solids contact clarifier

The 1930 vintage plant still has operators controlling processes 24 hours a day; its capacity is two million gallons per day.



The building on the left is the main water plant, located just across the street from the training, administration and lab building.



Far Left: Toby Ross, Lola water/wastewater plant superintendent, stands in front of the new Ozone/DensaDeg control area.



Left: Ross stands next to one of the plant's new ozone generators.

Below: A new SCADA system is projected to cut operator time on-site by 50% or more.

that optimizes flocculation, reduces waste sludge volume and results in a rapid settling to optimize operation and treatment.

Chemical use in the new plant will be about the same as in the

Ozone was chosen over chlorine as the primary disinfectant because it is effective in killing a large variety of fecal bacteria and viruses. The need to kill the

The automated controls should reduce the staffing requirement to have personnel operating the plant from only eight to 12 hours per day.



present 1930s era plant, with the addition of ozone and polymers. A new SCADA system has been added. The automated controls should reduce the staffing requirement to have personnel operating the plant eight to 12 hours per day.

The new plant will produce up to four MGD. It is designed to be expanded to six MGD easily if needed. The current plant has a three-filter system; the new plant will have four anthracite/sand filters with a central control console in the filter room. The new plant will incorporate one console in the filter room for all filter controls. Processes such as backwashing will be controlled by the touch of a screen. The new plant will also have solids contact basins, a rapid setting basin and total redundancy on all major systems.

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Left: The lab room, housed in Iola's new administration building, has an abundance of light from windows and fixtures.

Right: One of the plant's new filters being backwashed. The filters are located in the same building as the lab.



sometimes fatal parasite cryptosporidium was one of the reasons the city changed to ozone as a disinfectant. "The chlorine could not eliminate cryptosporidium and ozone will

also improve water clarity," Ross noted.

A chlorine residual is required to be maintained throughout the distribution system. There is also always a chance of recontamination

in the distribution system. The chlorine will continue to kill bacteria to ensure the customers never get contaminated water.

The city anticipates that the new plant will come online mid-summer 2005.



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