

A publication of the City of Cottonwood
JUST THE FACTS!

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Welcome to another addition of *“Just The Facts!”* A publication produced by the City Manager’s office of the City of Cottonwood, to keep our citizens informed of facts within our community.

Arsenic and our Wastewater

In 2006, the Environmental Protection Agency (EPA) reduced the allowable levels of arsenic in drinking water from 50 parts per billion (ppb) to 10 ppb. As a result, the City of Cottonwood was required to install arsenic removal systems at 13 well-sites outside the City and 4 sites within City limits to meet the new EPA safe drinking water standards for arsenic.

Arsenic is a naturally occurring element found in groundwater across much of the western United States. The naturally occurring levels of arsenic levels found in raw, untreated groundwater in the Verde Valley range from greater than 70 ppb to less than 10 ppb. Well location, depth, geology and the amount of water withdrawn can affect the levels of arsenic found in our groundwater.

The removal of the arsenic is accomplished by passing water through a vessel that contains a manganese dioxide coated granular or resin media. Over time, the arsenic ions coat the media resulting in a reduction in the efficiency of the resin media’s ability to remove arsenic. When the efficiency of arsenic removal drops to a preset point, the water flow through the vessel is reversed. This reversed flow, or backwash cycle, strips the arsenic coating from the media, which discharges to the sewer system and is pumped to the Mingus Avenue Wastewater Treatment Plant (WWTP). If no direct sewer connection is available, as in the Verde Villages, the arsenic laden backwash is hauled by trailer to a specifically designed sewer connection near the airport.

The purchase and installation of the arsenic removal systems, piping and required electrical and control upgrades cost \$4.9 million with ongoing operations and maintenance expenses of \$750,000 annually. Approximately 22 million gallons of water per year are also required to backwash the treatment media.

Another issue resulting from the removal of arsenic is the added costs associated with the disposal of biosolids. Prior to the implementation of arsenic treatment, the biosolids produced by the WWTP were applied to agricultural land growing crops such as sod

or animal feed. The increased levels of arsenic in the biosolids produced by the WWTP are now prohibited from being applied to agricultural lands and must be disposed of in landfills at an additional cost of \$4-\$5 per ton.

Recently, a new well, reservoir and arsenic treatment system were installed for the Mesquite Hills subdivision through a public/private partnership between the City and VRE Cottonwood LLC.

This new system has the capability of removing arsenic from the backwash water before it is discharged to the sewer system. The backwash water is held in a cone shaped tank while the arsenic solids settle to the bottom. The arsenic solids are then drained from the tank, dried and hauled to a landfill for disposal. The water in the tank is then returned to the start of the treatment process. By employing this type of process, the volume of water required for arsenic removal is greatly reduced and the volume of arsenic going to the WWTP is also reduced as well. By reducing the in-flow levels of arsenic to the WWTP, the levels of arsenic in the biosolids can be maintained at a level that allows for disposal on agricultural lands, which is a cost reduction to the city. Utility Department Operations staff are closely monitoring the quality of the water produced, the arsenic levels of the backwash water, and the quantity of arsenic solids to be land filled at the Mesquite Hills well-site.

If this process is successful, the Utility Department will begin installing similar equipment at other well-sites. The goal is to maintain compliance with the EPA safe drinking water requirements, while maximizing the disposal of biosolids and the efficient use of precious water resources.

“Unfunded federal mandates often have unintended consequences on the local level,” said Cottonwood City Mayor Diane Joens. “When the arsenic mandate became law, it also impacted wastewater compliance, causing the city to landfill biosolids rather than land applying them. This is an added cost to the ratepayers and



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Arsenic and our Wastewater (continued)

Does not make sense as a long term solution. It is good that technology is going to help us return to land application. Filling up our landfills this way is not sustainable.”

Trucks and trailers are used to haul the arsenic laden brine from the 13 Verde Village water reservoirs to the wastewater treatment plant inside the city limits of Cottonwood. This is a 30 to 40 hour per week task assigned to the wastewater division.



Cottonwood is a Safe Community

In a recent Verde Independent newspaper reader survey, citizens were asked whether they thought Cottonwood had become a more dangerous place to live and it was no surprise that 65 percent of those that responded perceived Cottonwood to be more dangerous. The reason that this response is not surprising is due to some significant violent events that have been widely reported and discussed.

The first was the incident that occurred at Walmart between Cottonwood officers and the Gaver family. The second incident was the sheriff’s deputy involved shooting in the Verde Villages just outside of Cottonwood. Both of these incidents created much media and social interest throughout the Cottonwood community and the interest in these two events could lead citizens to question the safety of our community. The incidents created much media and social interest throughout the Cottonwood community and the interest in these two events could lead citizens to question the safety of our community.

The Verde Independent asked a good question and those that responded provided their perception. However, let’s look at the facts to show all our citizens that such a perception is not supported by the facts.

Nationally, when considering 5- and 10-year trends, the 2013 estimated violent crime total was 12.3 percent below the 2009 level and 14.5 percent below the 2004 level as illustrated by the graphs below. The citizens of Cottonwood have enjoyed an even more significant decrease in violent crime of 42 percent from 2004 to 2013. In actual numbers, that equates to 76 violent crimes in 2004 to 44 in 2013. The totals for 2014 have not been released by the FBI however, our police department reports crime for each month and 2014 and 2015, there has not been an increase in violent crime.

Cottonwood has also seen a significant decrease in property crimes from 2004 to 2013 of 47 percent. It is important to note that the years 2003 and 2004 represent some of the highest years of crime in Cottonwood largely due to the challenges we all faced with the presence of meth. If we look back to the year 2000 before the meth epidemic and when our population was smaller, our occurrence of crime is still lower today than what we experienced in 2000.

If you asked citizens across the nation if they felt safer today, we would probably find that the majority do not feel safer even though the facts indicate that we are safer today. So why do we feel less safe? I would surmise that it is because crime is much more visible to us through various news media. Crime can be interesting and many people yearn for more details and the media responds to what their audience wants to see. And, certainly social media plays a significant role in creating our perceptions as well. Crime events can take up pages of blogs, text, and Twitter talking about what happened involving a particular crime. Many times the information exchanged may not even be accurate and the misinformation can create even more feelings of concern.

In summary, we should all stay informed and the media has always been an effective partner in that endeavor. We also need to be mindful of the influence information can have on our perceptions and before drawing any conclusions check with the experts to ensure our perceptions are supported by the facts. We are safer today in Cottonwood and that fact can be confirmed through our police department, the Arizona Department of Public Safety, and the federal Uniform Crime Report that all collect crime data and such information is always available to our citizens through those organizational websites.

