By Brian Bowles, Wastewater Tech

Water Reuse – Let Your Effluent Work For You

Water reuse, also commonly known as water recycling, can be an alternative for communities to help prolong the viability of the public water supply source. Saving water is especially important in the western part of Kansas and much of the U.S. experiencing extreme drought. Even if extreme drought is not currently an issue for a community or if the water supply source is more than adequate, there are many ways that a community can have wastewater effluent work for them. Treated wastewater effluent can be safely used to irrigate several areas within or near a community, such as golf courses and farm and pasture ground. By irrigating effluent to these areas, especially wastewater taken from lagoons, it is possible to move enough water to reach a point where there is no discharge to a receiving stream during the summer months when total suspended solids (TSS) levels are at their highest. The high TSS levels are usually due to heavy algae growth.

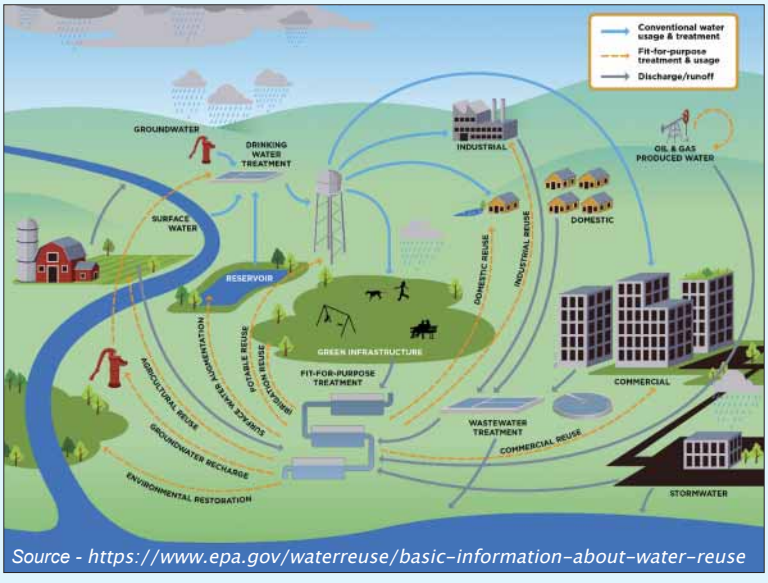
Suppose you have a golf course in your community. In that case, the use of treated wastewater effluent water is a great resource to irrigate the fairway grass and the area outside the fairway (rough) if an adequate amount of water is available. This can be very beneficial as it helps the golf course with its water use requirements and can be financially beneficial by reducing chemical expenses. It is important to note that the Kansas Department of Health and Environment (KDHE) permit will include many requirements, including monitoring for chlorine residuals and E. coli. Also, adequate signage will need to be provided for public safety.

This photo shows an irrigation gun spreading wastewater for a community in Kansas. This gun is designed to throw a 100-foot radius at 350 gpm at 120 psi.

Irrigation of wastewater effluent for agricultural purposes provides more of a challenge in that the effluent cannot be applied on cropland where the crops can come into direct contact with human consumption. Another challenge though, and maybe the biggest, is finding a landowner or farmer willing to work with the community. As noted previously, it is beneficial to the community to avoid a discharge to the receiving stream whenever possible, but it

Uses for Recycled Water

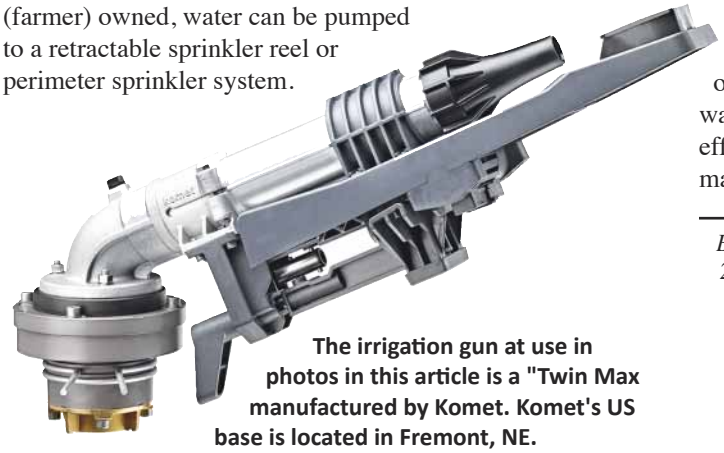
- Irrigation for agriculture
- Irrigation for landscaping such as parks, rights-of-ways, and golf courses
- Municipal water supply
- Process water for power plants, refineries, mills, and factories
- Indoor uses such as toilet flushing
- Dust control or surface cleaning of roads, construction sites, and other trafficked areas
- Concrete mixing and other construction processes
- Supplying artificial lakes and inland or coastal aquifers
- Environmental restoration



Source - https://www.epa.gov/waterreuse/basic-information-about-water-reuse

can also be beneficial to the farmer. The additional water will help sustain plant growth, but the nutrients in the effluent water may help reduce chemical expenses. Landowners must be provided with water quality information to make informed decisions. Common irrigation methods include pumping to an irrigation pivot system or to a holding pond and perimeter sprinkler system.

When irrigating pasture ground such as brome or native grass owned by the community, valve pits and an end gun trailer can be arranged. If the grassland is privately – (farmer) owned, water can be pumped to a retractable sprinkler reel or perimeter sprinkler system.



The irrigation gun at use in photos in this article is a "Twin Max manufactured by Komet. Komet's US base is located in Fremont, NE.

Irrigation of wastewater effluent for agricultural purposes provides more of a challenge in that the effluent cannot be applied on cropland.

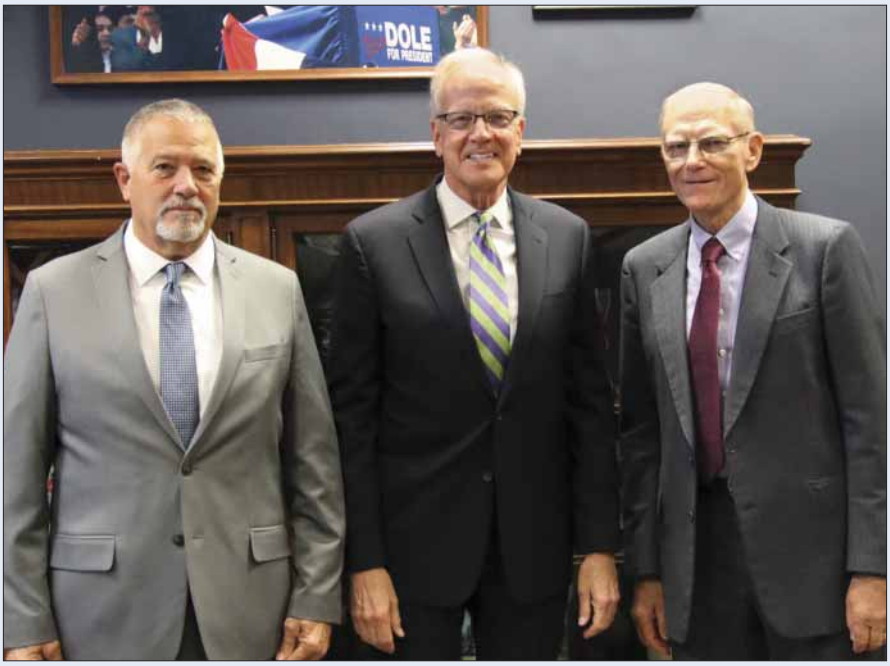
One of the requirements when irrigating wastewater effluent water is that all water must be retained on the target property. As required by the KDHE permit, water will not be allowed to run off of the property or drift onto another property. The benefits of irrigating wastewater effluent water though are that there will be less effluent monitoring expense, and the community will be making use of a very valuable resource.

Brian Bowles joined the KRWA staff in November 2021. Brian has 30 years of work experience in a lead or supervisory role in construction, technical and management positions. He most recently was the Public Works Superintendent at the city of Minneapolis, Kan. He is a Wastewater Tech at KRWA.

Kansas Rural Water Association Meets With Senator Moran

During the recent National Rural Water Association WaterPro conference, Sept. 27 to 29, held at National Harbor, Maryland, Bill Shroyer who is National RWA Director and Kansas Rural Water Association General Manager, Elmer Ronnebaum, met with Senator Jerry Moran to discuss the importance of the U.S. Department of Agriculture (USDA) Rural Development and the U.S. Environmental Protection Agency (EPA) water and wastewater programs in helping rural communities address critical water needs.

As a member of the Senate Appropriations Committee, Moran works to prioritize funding for the USDA Grassroots Source Water Protection Program and Circuit Rider Program to make certain Kansans have access to safe, affordable water. During the meeting, they also spoke about the need for EPA to apply common sense to rules and regulations for lead and copper line replacement initiatives.



Bill Shroyer, KRWA Director and NRWA Director, Senator Jerry Moran, and Elmer Ronnebaum, General Manager of the KRWA, met on September 28. Senator Moran is a member of the Senate Appropriations Committee and has been a staunch supporter of the USDA Grassroots Source Water Protection Program and also the Circuit Rider Program.