

## Water for Sunflower Electric's Proposed Expansion

This fact sheet was prepared to answer questions about water rights for the proposed 895-megawatt coal-fired thermoelectric generating unit at Sunflower Electric Power Corporation's Holcomb station.

When plans for a new power plant, ethanol plant, or other large industry are announced, it is common for the public, legislators and water users to question what impacts the proposed facility could have on water resources. The answer depends on a number of factors including water needs of the new use, location and source of supply.

### Water Needs

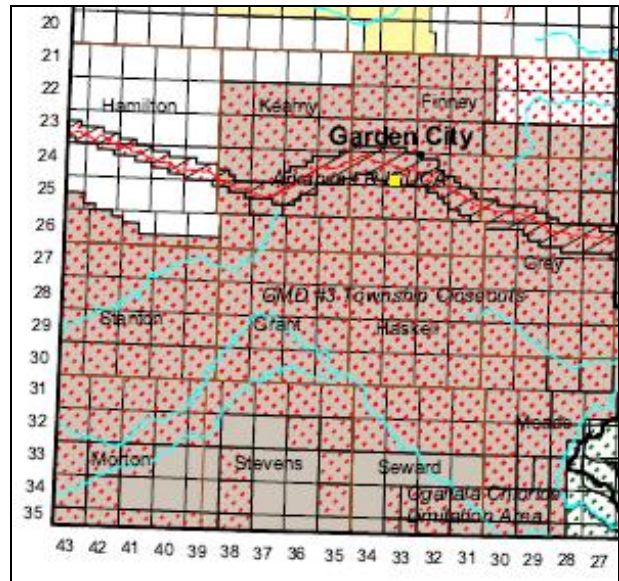
As of the date this was prepared, the Kansas Department of Agriculture's Division of Water Resources had not received any applications to change existing water rights related to this project. Therefore, we do not know the amount of water necessary to construct, operate and maintain the proposed generating unit.

According to Sunflower Electric's website, the existing generating unit at their Holcomb Station, or Holcomb 1, is rated at 362 megawatts. Water right information kept by the Division of Water Resources indicates that Sunflower Electric is currently authorized to divert 1,377 million gallons (4,226 acre-feet) of water per year to operate Holcomb 1 for electric power generation.

### Location

Sunflower Electric's existing and proposed expansion of Holcomb Station is located in section 32, township 24 south, range 33 west. This

describes a location in Finney County, Kansas, about 4 miles south and 1 mile east of Holcomb.



*Detail from DWR's "Closed and Restricted Areas" map showing approximate location of Sunflower Electric's Holcomb Station (yellow square south of Garden City).*

The site is within Southwest Kansas Groundwater Management District No. 3 and also within the Arkansas River Valley Intensive Groundwater Use Control Area (IGUCA). State regulations and the referenced IGUCA order have closed the area to new water rights due to declining groundwater levels and withdrawals that exceed recharge.

The only options for acquiring sufficient water for the proposed generating unit are to purchase water from a water supplier or acquire existing water rights and convert them to industrial use. Based on meetings with the project proponents in recent years, it is our understanding that they have purchased irrigation water rights and intend to apply to have the rights changed to industrial use when the new generating unit is constructed.

## Water Right Changes

The Kansas Water Appropriation Act states water rights may only be changed if certain criteria are met. One criterion is that the point of diversion must remain within the same local source of supply as the existing point of diversion. This means any replacement well must be within a short distance from the original well, generally within a half mile.

Also, water right changes are prohibited from impairing other existing water rights. For example, the new use and/or new well location are not allowed to cause an unreasonable lowering of the water table to neighboring wells.

Changes in water use are governed by regulations that limit the authorized quantity of the changed water right to the historical consumptive use of the initial water right. Precipitation varies from year to year, so the quantity of water authorized by an irrigation water right typically is not fully used every year. When a water use is changed from irrigation to any other use, only the amount of water that was consumed by the crop can be changed to the new use.

With an industrial water use, such as for a power plant, water is typically diverted year-round and little if any of the water is returned to the supply source. There are exceptions, however, such as for once-through cooling systems.

If irrigation water rights are changed to industrial water rights for the new generating unit at Holcomb, the authorized quantities of the individual water rights will be adjusted so there is no net increase in the total quantity of water consumed from the source of supply.

## Source of Supply

There are several reliable water supply sources in the vicinity of Sunflower Electric's Holcomb Station: the Arkansas River alluvial aquifer; the Ogallala aquifer (also known as the High Plains aquifer); and the Dakota aquifer. Most irrigation water rights in the area are from the Ogallala aquifer.

According to a map from the Kansas Geological Survey, "Estimated Usable Lifetime for the High Plains Aquifer in Kansas," Sunflower Electric's Holcomb Station is located in an area estimated to have 50 to 100 years of remaining usable life at existing rates of withdrawal. As previously noted, state regulations limit any water right changes to historical consumptive use so the impact on the aquifer does not increase.

## Permitting

When DWR receives and processes permit applications for Sunflower Electric's Holcomb Station, the chief engineer expects to have a public hearing to accept input regarding the proposed water right changes.

## Contact

Questions regarding potential water use for Sunflower Electric's proposed generating unit at Holcomb Station may be directed to:

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