

SONOMA VALLEY COUNTY SANITATION DISTRICT

The Sonoma Valley County Sanitation District

(SVCS D) treatment plant is located amid the vineyards and the rolling hills of the Sonoma Valley in Sonoma. The plant began operations in the 1950s and has since evolved into the largest county sanitation treatment plant. The current plant is designed and operated to provide its service area with state-of-the-art tertiary-treated wastewater for an average daily dry-weather flow of up to 3 million gallons per day (mgd).

The treatment plant currently treats:

Average dry-weather flow:	2.7 mgd
Average wintertime maximum treatment:	11 mgd
Average winter flow peak:	22 mgd

Service Area

The SVCS D service area covers approximately 4,500 acres and includes the City of Sonoma and the unincorporated areas of Agua Caliente, Boyes Hot Springs, Eldridge, Fetters Hot Springs, Glen Ellen, Schellville, Temelec, and Vineburg. The SVCS D plant treats wastewater from approximately 17,027 equivalent single-family dwellings.

The treatment plant cleans the community's wastewater to tertiary-recycled-water standards (also referred to as *advanced water treatment*), which is the highest level of treatment defined by the State of California (referred to as *Title 22*). This level of treatment allows for unrestricted reuse in virtually all recycled-water applications.

Wastewater goes through three treatment steps before it is considered tertiary recycled water: primary treatment, biological treatment (secondary), and filtration (tertiary). This is followed by disinfection, whereby chlorine is used to destroy pathogenic microorganisms.

Between May 1 and October 31, tertiary recycled water is used for agricultural irrigation. Between November 1 and April 30, the recycled water is discharged into Schell Slough or Hudeman Slough.

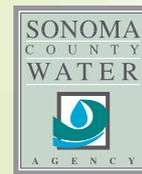


Solar Power Use

One-third of the treatment plant's power needs are met by the use of a 1.04-megawatt solar power system. The system includes 5,208 ground-mounted solar panels covering nearly 5 acres. A seasonal wetland is protected on the site.



Sonoma County Water Agency's Role



During a 1995 restructuring of the county government, the Sonoma County Water Agency assumed responsibility for managing the county sanitation zones and districts, which provide wastewater treatment, reclamation, and disposal for approximately 22,000 residences and businesses. Because some local wastewater treatment plants have not been significantly improved in more than 20 years, capital projects are needed to ensure compliance with state and federal treatment and discharge requirements. Each sanitation zone and district operates under a unique, individual permit from the California Regional Water Quality Control Board (San Francisco and North Coast regions) that sets the requirements for operation. The SVCS D operates under a permit from the San Francisco Regional Water Quality Control Board.

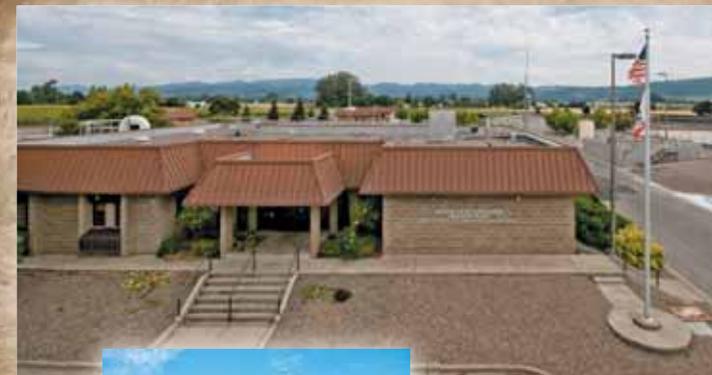
SVCS D Board of Directors

The SVCS D Board of Directors is composed of the three people who hold these elected positions:

- Mayor, City of Sonoma
- First District Supervisor, Sonoma County Board of Supervisors/Sonoma County Water Agency
- Chair, Sonoma County Board of Supervisors/Sonoma County Water Agency

For more information about the SVCS D, visit www.sonomacountywater.org or call (707) 547-1900.

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Treatment Facilities and Processes

1

Headworks Raw sewage from domestic and commercial sources enters the treatment plant at the headworks. At this point large inorganic solids in the waste stream are removed. Smaller solids, or grit, are removed from the wastewater before it enters the aeration basins.

2

Aeration Basins The wastewater undergoes biological treatment in the aeration basins. Air is injected into the wastewater to promote the growth of microorganisms that feed on organic materials in the sewage.

3

Secondary Clarifiers Wastewater undergoing biological treatment in the aeration basins is pumped to the clarifiers to separate the water from the solids. The suspended heavier materials settle to the bottom of the clarifiers as a thin mud—called *sludge*—and are returned to the aeration basins. Secondary-treated water flows over the weirs of the clarifier and is sent to the tertiary filters.

8

Operations Building The operations building contains personnel offices, facilities to control plant functions, and a laboratory to evaluate plant performance.

7

Storage Reservoirs Three off-site reservoirs with a combined capacity of nearly 200 million gallons are used to store recycled water from the tertiary filters. The recycled water stored in the reservoirs is used to irrigate more than 2,000 acres of premium grapes in the Carneros appellation. Recycled water is also used for irrigation of dairy fodder crops. Tertiary water that does not meet water-quality standards is automatically diverted to the 1.5-million-gallon equalization basin, where it is then pumped back to the headworks or to an aeration basin for retreatment.

6

Solids Handling The excess sludge in the wastewater system is removed from the treatment process and compacted in a press for disposal in a landfill.

4

Tertiary Treatment Filters The clear *effluent* (treated wastewater) from the secondary clarifiers is filtered through an approved tertiary filter to produce recycled water. This filtering process removes the remaining suspended solids in the effluent. To prevent clogging, the solids that accumulate in the filters must be occasionally flushed out during a backwash cycle and returned to the aeration basins.

5

Disinfection The clear effluent from the tertiary filters flows into the chlorine contact chamber, where pathogenic microorganisms are destroyed. After disinfection, any remaining chlorine is neutralized with sulfur dioxide.

