San Ramon Valley Recycled Water Program

2009 Recycled Water Quality Annual Report

RECYCLED WATER:
San Ramon Valley is Ahead of the Curve

As communities throughout California grappled with restricted water supplies in 2009, customers of the San Ramon Valley Recycled Water Program (SRVRWP) benefited from two decades of local planning and investment in recycled water infrastructure. Many businesses and public agencies in Dublin and San Ramon can now rely on a drought-resistant, environmentally responsible supply of irrigation water that protects their investment in landscaping and green spaces and supports the economic health of the region.

Using recycled water eases demand on the fragile ecosystems that supply our drinking water. The SRVRWP delivered 717 million gallons of recycled water during 2009, saving enough potable water to meet the annual needs of approximately 5,900 homes (based on 334 gallons per day, an average amount for single family homes in Dublin and San Ramon).

Recycling water also avoids the energy use and carbon emissions associated with pumping wastewater over long distances. The SRVRWP reuses water that originated in the Delta. As treated wastewater, it would be pumped 16 miles to the San Francisco Bay after being used only one time. In addition to reducing our carbon footprint, discharging a smaller amount of treated wastewater into the Bay also helps protect this vital ecosystem.

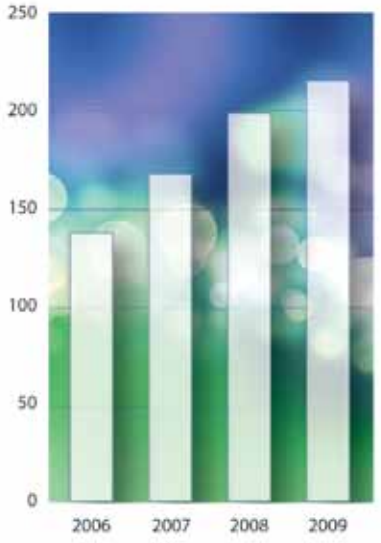
The SRVRWP continues to meet or surpass all regulatory requirements for water reuse. This annual report summarizes the water quality data submitted to the Department of Public Health and Regional Water Quality Control Board for 2009.

The program has grown steadily since deliveries began in February 2006, expanding to 214 sites by the end of 2009. In this report we profile two of our customers, highlighting the best management practices they use to get the most from their irrigation systems. Regional partnerships like the SRVRWP are providing a model of successful water reuse for water agencies throughout the state. We appreciate the way our customers work with us to save water and protect our environment.

Bert Michalczyk
General Manager
Dublin San Ramon Services District

Dennis M. Diemer
General Manager
East Bay Municipal Utility District

Recycled Water Reaching More Sites Each Year

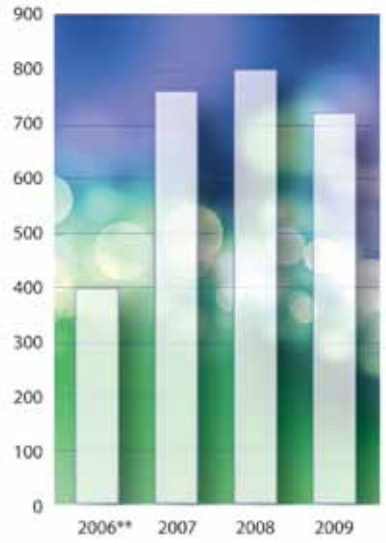


Number of Customer Sites* at Year End

By the end of 2009, SRVRWP customers were using recycled water for irrigation at 214 locations in Dublin and San Ramon.

**Number of licensed sites. Many large customers, such as cities and school districts, have multiple sites, and many sites have multiple meters.*

717 Million Gallons Delivered in 2009



Million Gallons Delivered

The amount of recycled water delivered increased annually during the SRVRWP's first three years. During 2009, repairs at a large customer site during the summer and pipeline construction caused a temporary decline in recycled water delivery volume. Growth is expected to resume in 2010.

***Partial year, February - December 2006.*

CUSTOMER PROFILE:
Sybase, Inc.

Enterprise software giant Sybase, Inc. has been using recycled water since it moved to Dublin in 2002. In 2009 the savings amounted to 4.6 million gallons of potable water, enough to supply 38 Dublin single family homes year around.*

Sybase's Dublin campus houses around 700 employees in 420,000 square feet of office space on 14.5 acres of land. The Sybase facilities team views recycled water as a valuable resource that helps the global software company be efficient and environmentally responsible. Irrigating the campus with recycled water is an important part of the company's green business effort, which also includes initiatives such as running an energy-efficient data center and recycling food scraps from its employee café.

"We are reusing a limited natural resource instead of pumping it out to the bay."

"We are reusing a limited natural resource instead of pumping it out to the bay," says Vince Herington, Director of Operations at Sybase. "Ultimately, that's the biggest benefit."

Aside from conserving water, recycled water irrigation provides another benefit: reduced fertilizer consumption. Because recycled water contains nutrients such as nitrogen, phosphorus and potassium, Sybase's landscape stays vibrant and healthy with very little fertilizer. With potable water, according to Herington, the company would need to fertilize six to eight times a year. With recycled water, the property is fertilized only once a year. This saves Sybase $2,000 and eliminates the use of 2,450 pounds of fertilizer each year.

Real Estate and Facilities Coordinator Robin Tate works closely with contractor Trimacs Landscaping of Oakland to manage the irrigation system and landscaping at Sybase. "We turn down irrigation in concert with the weather," says Tate, "and we use plenty of mulch to maintain soil moisture. With wind a constant factor in Dublin, we regularly check sprinklers to prevent runoff and overspray."

To further conserve water, Sybase is incorporating California native plants that require even less irrigation where possible and plans on converting some spray heads to drip irrigation.

Along with Herington and Tate, Trimacs Account Manager Julie Gile attended required training for on-site supervisors sponsored by Dublin San Ramon Services District (DSRSD). The half-day session covers state and local regulations that recycled water irrigators must follow, including preventing cross connections with potable water plumbing, inspections, and reporting regularly to the supplier.

"Maintaining the system is what saves the most water in the long run," says Florence Khaw, Environmental Compliance Inspector II for DSRSD. "During our annual inspections, we can see how well Sybase and Trimacs keep on top of maintenance. They fix broken sprinklers immediately and stay on schedule with self-monitoring reports and system checks."

Sybase's efforts haven't gone unnoticed. "People in the community come up and talk to us about how beautiful our landscaping is and how great it is that we are using recycled water," Tate says. "And our employees are always pleased and proud when we do something to be a greener company."

*Based on 334 gallons per day, an average amount for single family homes in Dublin and San Ramon.

CUSTOMER PROFILE:
Country Club Village Shopping Center

The encouraging demographics of the San Ramon Valley area were a big factor in the decision by investors to purchase the Country Club Village Shopping Center (CCVSC) in 2007. This neighborhood retail center in San Ramon was built about 15 years ago and the new owners found it to be well maintained, with a stable and long-term-lease tenant base, and located in an area of increasing population with a favorable median household income, among other positive attributes.

"The shopping center has beautiful grounds and is located right next to the Iron Horse Trail," says Kurry Wannagat, the site's managing agent on behalf of the owners and Center West Management, Inc., a property management firm based in San Luis Obispo.

East Bay Municipal Utility District retrofitted Country Club Village Shopping Center in 2006 so it could be irrigated with recycled water. "The monetary value [of irrigating with recycled water instead of potable water] is huge," says Wannagat when she compares the CCVSC's water bills with other customer sites under Center West's management in California.

Center West Management contracts with Heidi Romppanen, a landscape manager with CB Richard Ellis and whose credentials include a Bachelor of Science degree in horticulture. The CCVSC was irrigated with recycled water at the time Romppanen came onboard about three years ago. The new owners and Center West followed through on her recommendations by investing in irrigation system improvements and more drought-tolerant landscaping, including roses. "The landscaping at the Country Club Village Shopping Center has done really well on recycled water and I see no issues with the recycled water, which is of good quality," Romppanen said.

Romppanen shared some tips for customers, regardless of whether they irrigate with potable water or recycled water:

1. Know if your water supplier has any limitations on water usage, e.g., amount, quality, water budget, or tiered pricing.
2. Perform regular irrigation system evaluations to prevent undue leakage and irrigation deficiencies. Make any necessary repairs in a timely manner to prevent excessive loss of water.
3. Change the irrigation controller settings once every month in response to weather/temperature changes.
4. Do not turn off the irrigation controllers during the winter/rainy season. Instead set them to run for one minute every week or every other week to prevent irrigation equipment failures (e.g., valves, clogged nozzles, sprinkler heads and pistons). This kind of preventive maintenance can pay big dividends with less money having to be spent on irrigation system repairs and replacements at the start of the irrigation season.
5. For those who irrigate with recycled water, less frequent start times combined with longer run times should help prevent salt buildup in the soil.

Will Rogers, landscape contractor and partner in the firm of Planned Environments, Inc., is the Recycled Water Site Supervisor for the CCVSC. As someone whose job is landscape maintenance, Rogers can see the pros and cons of recycled water irrigation.

"We have a limited water supply in California, so irrigating with recycled water is a smarter use of this resource," observes Rogers. "For most customers, it costs them less to irrigate with recycled water."

According to Rogers, recycled water use does present challenges. He believes that recycled water "may cause more wear on irrigation systems" and that due to public and environmental health concerns by regulators, "there is a greater sense of urgency about promptly repairing leaks or breaks and to being sensitive to possible public exposure when irrigating."

"The landscaping at the Country Club Village Shopping Center has done really well on recycled water…"

Rogers appreciatively gives credit to the CCVSC's owners and Center West for investing in property improvements, including the landscaping. He notes that, "The shopping center is a good-looking site and the landscaping is doing well, with healthy, thriving plants and lots of seasonal color."

Continuous Testing Ensures the Quality of Recycled Water

Recycled water supplied to San Ramon Valley Recycled Water Program customers not only meets all regulatory requirements for water reuse but exceeds these standards 99 percent of the time.

The table above summarizes the water quality parameters tested during 2009. Two key standards are monitored and recorded continually by electronic means: **turbidity** (the number and size of particles suspended in the water) and **ultraviolet transmittance** (the amount of ultraviolet light absorbed by particles during disinfection). Technicians in the DSRSD laboratory periodically test these parameters manually to ensure that the automatic monitoring equipment is accurately calibrated.

Every day, technicians also measure total coliform bacteria to make sure the water is clean and adequately disinfected. The laboratory tests the other parameters listed in the table on a monthly basis to ensure the water is safe for landscape irrigation and meets all regulatory requirements for recycled water.

Recycled Water Quality in 2009

INORGANIC CHEMICALS (units)	AVG	RANGE
Selenium (µg/L)	< 2.0	NA
Nitrate (as N) (mg/L)	1.3	< 1.0 - 2.4
Nitrite (as N) (mg/L)	1.7	< 1.0 - 6.6
REGULATED CONTAMINANTS WITH SECONDARY MCLs*		
Conductivity (µmhos/cm)	1327	1088 - 1690
Chloride (mg/L)	159	108 - 198
Sulfate (mg/L)	97	59 - 150
Total Dissolved Solids (mg/L)	660	546 - 772
UNREGULATED CONTAMINANTS REQUIRING MONITORING*		
Boron (mg/L)	0.474	0.427 - 0.524
ADDITIONAL PARAMETERS		
Alkalinity (as Ca CO_3)(mg/L)	278	235 - 330
Total Hardness (as $CaCO_3$) (mg/L)	244	170 - 326
Calcium (mg/L)	48	34 - 66
Magnesium (mg/L)	30	21 - 39
Potassium (mg/L)	22.7	19.9 - 26.4
Sodium (mg/L)	150	122 - 172
pH (standard units)	7.35	7.02 - 7.61
Silica (mg/L)	19.4	16.0 - 23.0
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS		
Total Coliform Bacteria (MPN)	< 2**	< 2 - 17
ORGANIC CHEMICALS		
None Detected	-	-

* Established by the State of California Department of Public Health

** Median

ABBREVIATIONS: µg/L = micrograms per liter, mg/L = milligrams per liter, MCL = maximum contaminant level, MPN = most probable number, µmhos/cm = micromhos per centimeter

Dublin San Ramon Services District
7051 Dublin Blvd.
Dublin, CA 94568-3018
www.dsrsd.com

East Bay Municipal Utility District
Office of Water Recycling, MS 702
P.O. Box 24055
Oakland, CA 94623-1055
www.ebmud.com

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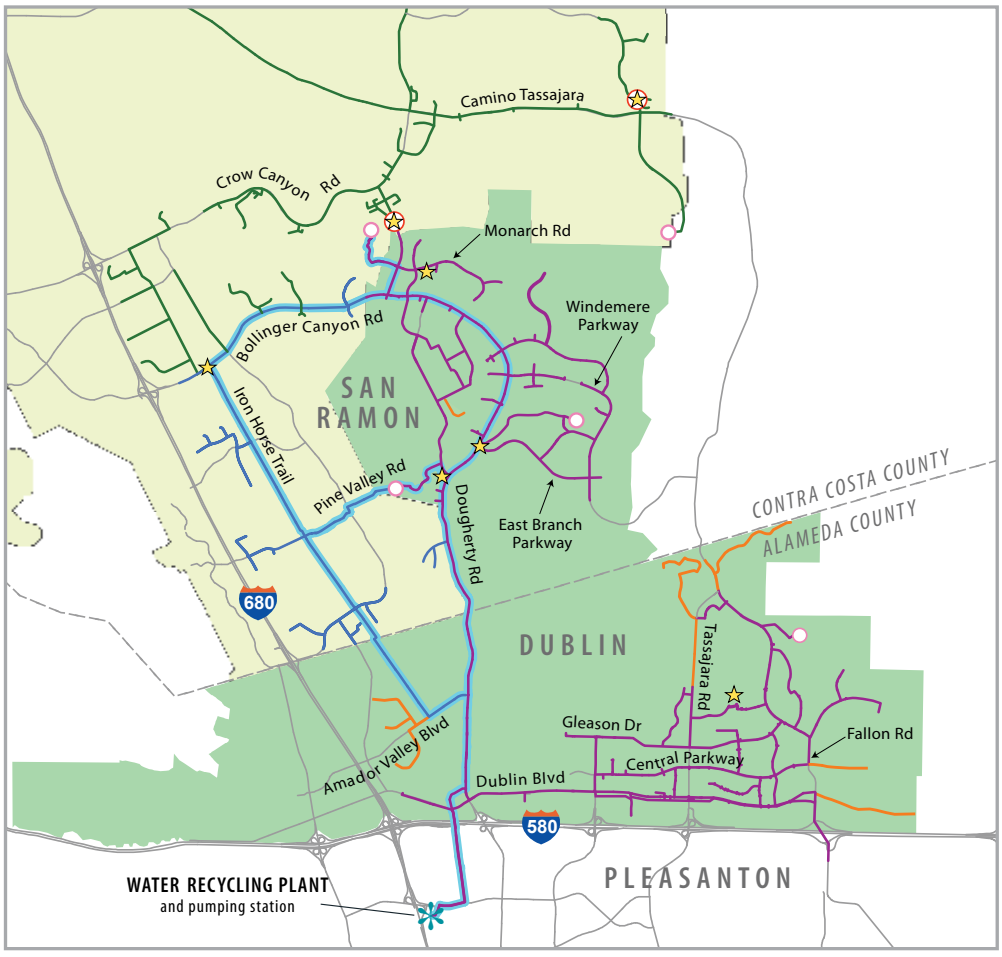

San Ramon Valley Recycled Water Program Pipeline Map

February 2010

- SRVRWP Transmission Pipeline
- Dublin San Ramon Services District Recycled Water Pipeline
- Future Dublin San Ramon Services District Recycled Water Pipeline
- East Bay Municipal Utility District Recycled Water Pipeline
- Future East Bay Municipal Utility District Recycled Water Pipeline
- Dublin San Ramon Services District Water Service Area
- East Bay Municipal Utility District Water Service Area
- Pumping Station
- Future Pumping Station
- Reservoir
- Water Recycling Plant