

Best plant

Saving water at Joaquin Ranch



Water savers. Clear water is product of Bob Manry, Joe Donovan, Steve Polzin, Bob Olds, Norm Mobr, Chuck Bollinger. Above right, Hydro-Clear® filter, with Olds at controls. Bear Creek links.

Award-winning California plant recycles every drop. Six-year-old Hydro-Clear® filter controls suspended solids, turbidity; is the key to clarity.

Six years ago they pumped it into a tank truck and paid someone to haul it away.

Today it's so valuable they recycle every drop.

It's reclaimed wastewater, and it's the reason the Joaquin Ranch Water Reclamation Facility near Temecula, CA, received a 1990 Best Plant award from Zimpro Passavant Environmental Systems, Inc.

Joaquin Ranch operates a Hydro-Clear® filter and recycles all its treated wastewater to the irrigation system at the nearby Bear Creek Golf Course and residential development.

"We reclaim every drop of

our flow," explains Bob Manry, wastewater foreman. "And we couldn't meet our turbidity and suspended solids permits without the filter. It gives us real good service."

There wasn't always such a strong current toward wastewater recycling here. When Manry began working for the local water district six years ago, it was common practice to pump wastewater to a truck and have it hauled away. It was cheap; the area was sparsely settled; and the treatment facility had only one employee.

All that has changed. The Joaquin Ranch plant was



Award. Manry presents plaque to Operations Manager Ken Dealy (right).



built in 1982 and the Hydro-Clear filter commissioned in 1985, just in time for a prolonged drought that has lasted for more than five years.

Treatment train.

At the plant, wastewater first receives preliminary treatment and then biological treatment in an oxidation ditch. Following clarification, it is dosed with alum (no polymers are used) and then enters an equalization tank until it is pumped to the filters. There it passes through a 10-inch (0.254 m) bed of fine sand, which can be pulsed periodically to regenerate the filtering surface and store suspended solids.

Finally, it is chlorinated, and mixed with potable water and recycled.

Manry explains that the average dry weather flow is

250,000 to 300,000 gallons a day, and since the Bear Creek complex needs about a million gallons a day, the potable water makes up the difference.

Also, says Manry, during wet weather, the plant stores secondary treated effluent in a large surface holding pond, and then pumps it back through the filter as capacity is regained.

These measures enable the plant to produce a constant flow of quality water for the irrigation system.

Growing area.

Joaquin Ranch is one of two treatment plants operated by the Rancho California District, which serves this rapidly growing area midway between San Diego and Riverside County. Bear Creek is one of at least a dozen golf

courses in the area, and new homes and high-tech industries are appearing regularly. At the same time, the drought persists.

"There's no end in sight," Manry says of the weather. He could well be referring to the need for recycled wastewater, too.

Effluent Quality Joaquin Ranch

Dec. 1990	MGD Reclaimed	Turbidity TO (24 hr. ave.)	% time exceeding 5 TU
1	.246	.4	0
2	.237	.4	0
3	.237	.4	0
4	.221	.4	0
5	.221	.4	0
6	.219	.4	0
7	.248	.4	0
8	.289	.4	0
9	.287	.4	0
10	.238	.4	0
11	.252	.4	0
12	.238	.3	0
13	.207	.3	0
14	.268	.3	0
15	.245	.3	0
16	.138	.3	0
17	.212	.4	0
18	.309	.4	0
19	(to ponds)		
20	(to ponds)		
21	.149	.4	0
22	(to ponds)		
23	.235	.5	0
24	.193	.4	0
25	.322	.4	0
26	.275	.4	0
27	.275	.4	0
28	.146	.4	0
29	.237	.3	0
30	.242	.3	0
31	.272	.3	0
(.238 ave.)	2.0 required	5.0% max.	

Data:

Plant: Wastewater reclamation; average design flow 0.6 million gal/d (95 m³/h).

Processes: Preliminary treatment, oxidation ditch, clarification, chemical addition, equalization, filtration, disinfection. Sludge aerobically digested, dewatered on drying beds.

Zimpro Passavant equipment: Hydro-Clear® pulsed bed filter; model C-2, 2-cells, 198 square feet (18.3 m²).

Startup: 1985.

Effluent use: Mixed with potable water, used for irrigation.

Owner: Rancho California Water District, Temecula, CA.

Operations Manager: Ken Dealy.

Wastewater Foreman: Bob Manry.

Director of Operations and Maintenance: Tom McAliester.

Staff: Chuck Bollinger, Norm Mohr, Joe Donovan, Bob Olds, Steve Polzin.