



Reedy Creek Improvement District

2022 Reclaimed Water Quality Report

Water is too valuable to be used only once. Reedy Creek Improvement District (RCID or District) has been reclaiming and reusing water for three decades. Reuse of treated wastewater for non-potable (non-drinking) purposes has been a long running water conservation initiative at RCID that has reduced the consumption of potable water and bolstered the conservation of our natural resources. Today, reclaimed water meets close to 30% of all water re-source needs of the 43 square mile District.

RECLAIMED WATER USES

- Landscape irrigation (about 1535 acres)
- Vehicle and bus washing (about 390 buses and 1300 vehicles)
- Street and sidewalk cleaning
- Cooling tower makeup
- Fire suppression and fire prevention
- Dust control and construction
- Process water (at wastewater treatment plant)
- Toilet flushing (at selected locations)

Of the approximately 1,942 acres of irrigated area within the District, about 79% is irrigated with reclaimed water. In the future, the District and its customers will continue to pursue conversions of reclaimed water whenever feasible. All new development and redevelopment within RCID is required to connect and use reclaimed water for irrigation and other non-potable needs. Doing so helps to ensure sustainability of the drinking water supply, the Upper Floridian Aquifer, by reducing demands on this finite source of high quality water.



RECLAIMED WATER STANDARDS

Reclaimed water is a product of the wastewater treatment process. At RCID, wastewater is treated to an advanced level via biological means. It is then filtered and disinfected. The resultant reclaimed water typically meets all of the primary and secondary drinking water standards as set by the U.S. Environmental Protection Agency and is visually indistinguishable from tap water. The latest comparison of our reclaimed water quality result to the drinking water standards is provided in the accompanying table. While the reclaimed water typically meets the drinking water standards, it is not (and should not) to be used for consumption, cooking, bathing or body contact, in pools or spas, or to wash edible crops.



Nutrients in reclaimed water will vary widely with the source and level of treatment provided. Nutrients (principally nitrogen and phosphorus) are essential to all life forms, but excessive nutrients can lead to imbalances in aquatic flora and fauna spawning algae blooms and nuisance species. At RCID, most of the nutrients in the reclaimed water are removed in the treatment process (typically more than 95%) and those forms that remain are not normally readily available to plants and aquatic organisms. RCID's reclaimed water averaged 1.86 mg/l (or 1.86 part per million) of total nitrogen and 0.22 mg/l of total phosphorus in 2022. FDEP regulatory annual limits for nitrogen and phosphorus are 6.0 mg/L and 1.0 mg/L respectively. These values represent excellent removal and are near the limits of achievable technology. Users of reclaimed water should be aware of the presence of these constituents and account for their value when determining fertilization rates and when operating irrigation systems in close proximity to surface waters.

RECLAIMED WATER DISTRIBUTION AND DISPOSAL

Reclaimed water is delivered to RCID customers through a distribution system of underground pipes very similar to the potable water system. The pipes of the reuse distribution system are color coded purple by pigmentation, paint, or striping and tape. Purple pipes, hydrants, valves, valve boxes and fittings identify the reclaimed water system throughout RCID. The purple designation is a State of Florida requirement and is an important measure to guard against cross connections with other piping systems and other unintended uses.



Another aspect of the RCID reuse system is the use of rapid infiltration basins (RIBs) for wet weather disposal and groundwater recharge. During wet weather periods (or when demands on the reuse distribution system are low) the RIBs are utilized for disposition of excess product water. Disposing excess reclaimed water in RIBs recharges the local aquifers.

The RIBs consist of 85 one-acre basins situated on a ridge of sandy soils with high percolation characteristics. Water applied to the RIBs percolates through the sandy soils (between 30 and 70 feet thick) and replenishes the surficial and Upper Floridian aquifers. This practice helps to ensure sustainability of the water supplies by returning a portion of the product water to its source. During the course of 2022, about 60% of the product water was applied to the RIBs and 40% to the reuse distribution system.



The RCID RIBs are located in the northwest corner of the District, and the site is bisected by the Western Beltway (Florida State Road 429). The RCID RIBs are visible to passing motorists from both sides of the Beltway between Seidel Road and Western Way.

RECLAIMED WATER RATES

Service rates for reclaimed water are typically about 80% of those for potable water and include a similar volumetric charge and a readiness-to-serve charge. The rate is intended to provide an economic incentive for customers to use reclaimed water in lieu of potable water, as well as to conserve the resource and to discourage wasteful practices. The current volumetric rate is 44.50 cents / 1000 gal

BENEFITS OF RECLAIMED WATER

- Conservation of the drinking water supply
- Drought resistant and not subject to water use restrictions
- Promotes sustainability and conservation of natural resources
- Delays the development of expensive alternative water supplies
- Reduces potential adverse impacts to wetlands and surface waters



RECLAIMED WATER KNOWLEDGE

RCID appreciates this opportunity to educate its customers about reclaimed water and its role in water conservation. For additional information, please contact Randy Sims at 407-824-4842 or Randall.P.Sims@disney.com



Reedy Creek Improvement District 2022 Reclaimed Water Quality Analysis Results

(Samples Collected May 10-11, 2022)

Parameter Name	Units*	Conc.	Results	Drinking Water Standards	Parameter Name	Units*	Conc.	Results	Drinking Water Standards
Inorganics					Organics				
Antimony	mg/l	<0.001	BDL	0.006	2,3,7,8- tetrachlorodibenzo-p-dioxin	ug/l	<0.0000002	BDL	0.00003
Arsenic	mg/l	<0.0015	BDL	0.01	2,4- dichlororphenoxyacetic acid	ug/l	<0.28	BDL	100
Barium	mg/l	0.0015	0.0015	2	2,4,5-TP (Silvex)	ug/l	<0.022	BDL	50
Beryllium	mg/l	<0.00013	BDL	0.004	Alachlor	ug/l	<0.021	BDL	2
Cadmium	mg/l	<0.00009	BDL	0.005	Atrazine	ug/l	<0.047	BDL	3
Chromium	mg/l	0.001	0.001	0.01	Benzo(a)pyrene	ug/l	<0.011	BDL	2
Cyanide	mg/l	<0.005	BDL	0	Carbofuran	ug/l	<0.10	BDL	40
Flouride	mg/l	0.11	0.11	4	Chlordane (tech mix. and metabolites)	ug/l	<0.032	BDL	2
Lead	mg/l	<0.0004	BDL	0.015	Dalapon	ug/l	2.9	2.9	200
Mercury	mg/l	<0.00008	BDL	0.002	Bis(2-ethylhexyl)adipate	ug/l	<0.061	BDL	400
Nickel	mg/l	0.001	0.001	0	Bis (2-ethylhexyl) phthalate	ug/l	<0.14	BDL	6
Nitrate as N	mg/l	0.373	0.373	10	Dibromochloropropane (DBCP)	ug/l	<0.0031	BDL	0.2
Nitrite as N	mg/l	<0.005	BDL	1	Dinoseb	ug/l	<0.024	BDL	7
Nitrate plus Nitrite	mg/l	0.373	0.373	10	Diquat	ug/l	<0.35	BDL	20
Selenium	mg/l	<0.0005	BDL	0.05	Endothall	ug/l	<2.7	BDL	100
Silver	mg/l	<0.00005	BDL	0.05	Endrin	ug/l	<0.0050	BDL	0.02
Sodium	mg/l	83.3	83.3	160	Ethylene Dibromide (1,2-dibromoethane)	ug/l	<0.0052	BDL	0.02
Thallium	mg/l	< 0.0003	BDL	0.002	Glyphosate	ug/l	<0.0016	BDL	700
Volatile Organics					Heptachlor	ug/l	<0.0030	BDL	0.4
Para (1,4)-dichlorobenzene	ug/l	<0.013	BDL	75	Heptachlor Epoxide	ug/l	0.0050	0.0050	0.2
Vinyl chloride	ug/l	<0.16	BDL	1	Hexachlorobenzene	ug/l	<0.040	BDL	1
1,1 -dichloroethylene	ug/l	<0.15	BDL	7	Hexachlorocyclopentadiene	ug/l	<0.037	0.01	50
1,2-dichloroethane	ug/l	<0.086	BDL	3	Lindane	ug/l	<0.070	BDL	0.2
1,1,1-trichloroethane	ug/l	<0.15	BDL	200	Methoxychlor	ug/l	<0.022	BDL	40
1,1,2 - trichloroethane	ug/l	<0.16	BDL	5	Oxamyl (vydate)	ug/l	<0.17	BDL	200
1,2 -dichloropropane	ug/l	<0.096	BDL	5	Pentachlorophenol	ug/l	<0.0050	BDL	1
1,2,4-trichlorobenzene	ug/l	<0.12	BDL	70	Picloram	ug/l	<0.015	BLD	500
Cis-1,2-dichloroethene	ug/l	<0.090	BDL	70	Polychlorinated Biphenyls (PCBs)	ug/l	<0.085	BDL	0.5
Dichloromethane (methylene chloride)	ug/l	<0.20	BDL	5	Simazine	ug/l	<0.027	BDL	4
Ethylbenzene	ug/l	< 0.099	BDL	700	Toxaphene	ug/l	<0.083	BDL	3
Monochlorobenzene	ug/l	<0.14	BDL	100	Radiologicals				
1,2-dichlorobenzene	ug/l	< 0.16	BDL	600	Gross Alpha	pCi/L	<1.1	BDL	15
Styrene	ug/l	<0.089	BDL	100	Radium 226 and 228	pCi/L	<0.7	BDL	5
Tetrachloroethylene	ug/l	<0.18	BDL	3	Secondary Chemistry				
Toluene	ug/l	<0.086	BDL	1000	Aluminum, Total Recoverable	mg/l	0.0100	0.0100	0.2
1,2-trans-dichloroethylene	ug/l	<0.090	BDL	100	Chloride	mg/l	107	107	250
Trichloroethylene	ug/l	<0.13	BDL	3	Copper	mg/l	0.0027	0.0027	1
Xylenes	ug/l	<0.086	BDL	10,000	Iron	mg/l	0.0001	0.0001	0.3
Carbon tetrachloride	ug/l	<0.11	BDL	3	Manganese	mg/l	0.001	0.001	0.05
Benzene	ug/l	<0.082	BDL	1	Sulfate	mg/l	50.8	50.8	250
Total Trihalomethanes (TTHM)	ug/l	68	68.0	80	Zinc	mg/l	0.0165	0.0165	5.0
					pH (units)	mg/l	7.4	7.2	6.5-8.5
					Total Dissolved Solids	mg/l	414	397	500
					Foaming Agents	mg/l	<0.099	BDL	0.5

*Units:

mg/l are milligrams per liter or parts per million

ug/l are micrograms per liter of parts per billion

pCi/l are picoCuries per liter

**BDL means below the detection limit of the analysis technique employed