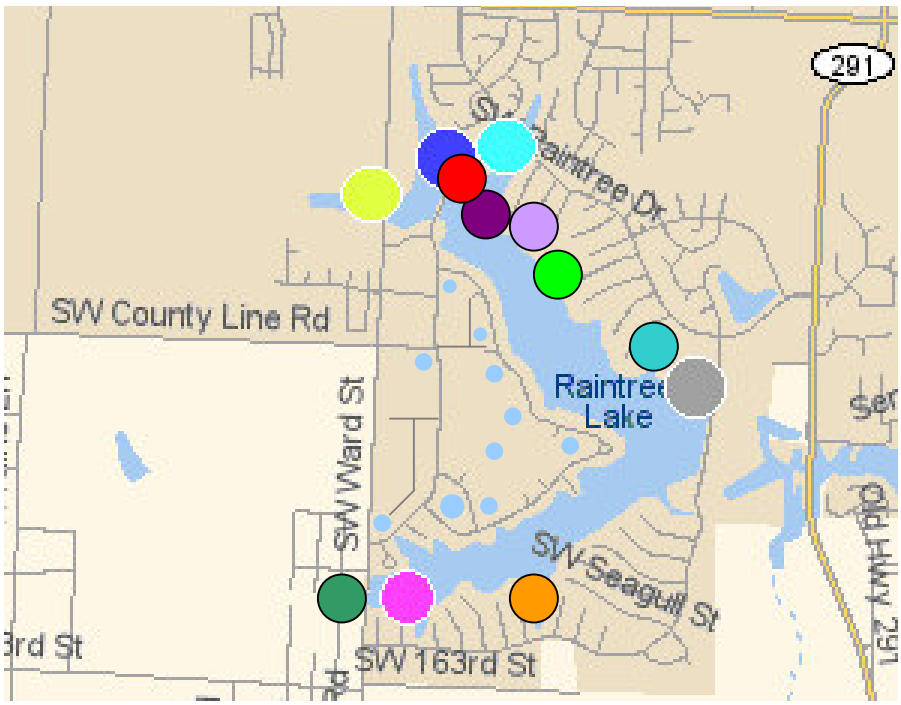
Raintree Lake Water Quality 2004



2004 RLPOA Fecal Coliform (fc) and Enterococcus (e)

Green = desirable **Orange = permitted** **Red = limit exposure**

Date	Clubhouse		Party Cove/RT CT/ RT Circle		Sunset Cove		Hidden Cove		North Boat Ramp		Normandy		Effertz		Widgeon/ Kingfisher		Bowsprit		Camelot/ Lafayette		Lido	
Test	fc	e	fc	e	fc	e	fc	e	fc	e	fc	e	fc	e	fc	e	fc	e	fc	e	fc	e
7/1	45	200	5	10	90	140	140	130	5	45												
7/6	400	200	285	144			400	876	70	139							86	552				
7/13	20	50	10	10			40	90	30	139					20	10						
7/23	150	2730			110	10	507	2000	10	10							40	10				
7/28	100	340					207	150	20	130			30	900					40	70		
8/3	530	1191	10	250	20	110	20	10	20	110	30	600	10	880	10	180			10	90	10	880
8/9	110	1040	20	30					20	20	20	140	20	40	50	20					20	40
8/11	20	10									30	60										
8/19	10	10	10	260	40	680	70	100					20	140								
8/26	100	410	30	160	980	6500	790	520					20	90								
8/31	10	10	10	20	190	270	120	90														
9/8	40	60	10	10	60	190	70	50					10	10								

Lab results require a 24-48 hour culture period

Numbers expressed in CFU/100mL

Blue Valley Laboratory and health department 30-day level recommendations for body contact:
Fecal Coliform < 200 desirable;
Fecal Coliform < 1,000 permitted;
Enterococcus < 60 permitted

Why Testing Is Important

Fecal coliforms

Fecal coliforms are a sub-group of a large family of bacteria known as total coliforms. These bacteria are conservative indicators of the possible presence of fecal contamination and human waste which may contain pathogens. Fecal coliform bacteria live in the intestines of warm- blooded animals and are used as an indicator of fecal pollution. Wildlife, pets and livestock, in addition to humans are all potential sources of fecal coliform bacteria, which diminish the efficacy of using these bacteria as indicators of human sewage pollution. Most fecal coliform bacteria do not cause disease, but co-exist with in intestines with disease-carrying pathogens that pose a public health risk. The higher the fecal bacteria counts, the higher the probability of pathenogenic bacteria pollution. While this group includes some species that can have a non-fecal origin, fecal coliforms are widely used to test recreational waters. Fecal coliforms die in the presence of sunlight.

Enterococcus

Enterococcus is another group of bacteria found primarily in the intestinal tract of warm-blooded animals. *Enterococcus* bacteria are a non-pathogenic subgroup of fecal *Streptococcus* and are measured as an indicator of the presence of human fecal material. Epidemiological studies have determined a correlation between *Enterococcus* concentrations in water and increased probabilities of illness in swimmers, although *Enterococcus* are not usually the cause illness.

http://dnr.metrokc.gov/wlr/waterres/streams/statefedcrit.htm

Environmental Impact:

The presence of fecal coliform bacteria in aquatic environments indicates that the water has been contaminated with the fecal material of man or other animals. Fecal coliform bacteria can enter rivers through direct discharge of waste from mammals and birds, from agricultural and storm runoff, and from untreated human sewage. Individual home septic tanks can become overloaded during the rainy season and allow untreated human wastes to flow into drainage ditches and nearby waters. Agricultural practices such as allowing animal wastes to wash into nearby streams during the rainy season, spreading manure and fertilizer on fields during rainy periods, and allowing livestock watering in streams can all contribute fecal coliform contamination.

What level is too high?

The current USEPA and KDHE recommendations for **body-contact recreation is fewer than 200 colonies/100 mL**; for **fishing and boating, fewer than 1000 colonies/100 mL**. The drinking water standard is less than 1 colony/ 100ml.
http://www.switzerland.k12.in.us/watershed/fecal.html

Will I get sick?

Whether you get sick from the water depends on many factors; the strength of your immune system, how bad the contamination is, whether you have an open cut or wound which would serve as a possible point of bacterial infection, etc. Studies have found the percentage of illness among swimmers increased as levels rose above 400 FC/*E.Coli.* The Santa Monica study found an 88% increase in skin rash when the FC/*E.Coli* standard was exceeded. When the *Enterococcus* standard was exceeded a 300% increase in diarrhea & a 40% increase in vomiting & fever was observed. This study also reported increased respiratory & gastrointestinal illnesses in swimmers that were in waters within 400 m of a storm drain.
http://www.surfridersanmateoco.org/protocol.php