

Sarapiqui Water Quality Indices

Site 1

Test	Result	Units	Q-value	Weight	Subtotal
pH	6.63	pH unit	80	0.133855	10.708434
Turbidity	5+	feet	98	0.097349	9.540241
Dissolved Oxygen	96	% sat	98	0.206867	20.273012
BOD	10.375	ppm	30	0.133755	4.0126627
Phosphates	5	ppm	2	0.121687	0.2433735
Nitrates	0	ppm	98	0.121687	11.925301
Fecal Coliform	6900	CFU/100mL	11	0.194699	2.1416867

Total 58.8447109
WQI Rating Good*

Other Tests		
Ammonia	0	ppm
Chlorine	0	ppm

*Adjusted Scale	
72-82	Excellent
52-72	Good
32-52	Medium
7-32	Poor
0-7	Very Poor

GPS readings
Elevation: 11 ft.
N 10° 10.117'
W 83° 14.076'
Bar. Pressure: 758.444 mmHg

Site 2

Test	Result	Units	Q-value	Weight	Subtotal
pH	6.54	pH unit	72	0.154306	11.11
Turbidity	5+	feet	98	0.112222	10.997778
Dissolved Oxygen	132	% sat	83	0.238472	19.793194
Phosphates	5	ppm	2	0.140278	0.2805556
Nitrates	0	ppm	98	0.140278	13.747222
Fecal Coliform	5400	CFU/100mL	12	0.224444	2.6933333

Total 58.62208333
WQI Rating Good*

Other Tests		
Ammonia	0	ppm
Chlorine	0	ppm

*Adjusted Scale	
61-71	Excellent
51-71	Good
31-51	Medium
6-31	Poor
0-6	Very Poor

Site 3

Test	Result	Units	Q-value	Weight	Subtotal
pH	6.89	pH unit	85	0.154306	13.115972
Turbidity	5+	feet	98	0.112222	10.997778
Dissolved Oxygen	132	% sat	83	0.238472	19.793194
Phosphates	4	ppm	2	0.140278	0.2805556
Nitrates	0	ppm	98	0.140278	13.747222
Fecal Coliform	3400	CFU/100mL	15	0.224444	3.3666667

Other Tests		
Ammonia	0	ppm
Chlorine	0	ppm

Total 61.30138889
WQI Rating Excellent*

*Adjusted Scale	
61-71	Excellent
51-71	Good
31-51	Medium
6-31	Poor
0-6	Very Poor

Overall Evaluation

	Purity %	WQI Rating
Site 1	72%	Good
Site 2	83%	Good
Site 3	86%	Excellent

Purification: 14.5781417911%

By readjusting the WQI rating scale, there is an obvious improvement in water quality. To determine just how much the water was purified, we can summarize all the results into a purification percentage by returning all the scores to the same denominator. There was a 15% increase in purification between Site 1 and Site 3. This percentage is probably actually higher, but Site 1 had already begun the purification process when the tests began. Even so, the water purification system is effective.