

Diamond Lake 2004 Sampling Results

Diamond Lake has impaired water quality conditions that inhibit recreational use. The lake is extremely eutrophic with phosphorus concentrations consistently above 100 µg/L. The average phosphorus concentration in 2004 was 189 µg/L with values ranging between 109 µg/L to 331 µg/L. The excessive amount of phosphorus in the lake is conducive for severe algae blooms. The average chlorophyll-a concentration was 58 µg/L in 2004. Seasonal variation in chlorophyll-a concentrations ranged between 37 µg/L to 82 µg/L. Consequently, water clarity conditions were extremely poor in which secchi depth measurements ranged between 0.2 to 1.2 m. The severe algae blooms provide a shading effect that inhibits the development of aquatic macrophytes. The poor water quality conditions are partially due to large amounts of watershed nutrient loading from surrounding agricultural areas. In addition, the shallow morphology of the lake is extremely conducive for internal loading of nutrients that are re-suspended from the sediments. The lake is frequently vulnerable to winter and summer fish kills due to the extreme eutrophic conditions.

Sample Id	Sample Date	Secchi m	Temp °C	DO mg/L	DO %	Sp. Cond µS/cm	pH	TP µg/L	SRP µg/L	TN mg/L	Chl-a µg/L
DIAMOND	27-Apr-04	0.40	11.0	11.1	101	0.32	9.84	165	3.8	2.14	56.9
DIAMOND	11-May-04	0.72						160	4.0	2.23	82.4
DIAMOND	25-May-04	0.57	13.7	11.1	107	0.34	8.38	169		2.21	42.3
DIAMOND	08-Jun-04	0.79	23.3	10.8	126	0.32	8.43	109		1.22	25.2
DIAMOND	21-Jun-04	0.45	20.7	9.6	107	0.30	8.26	136		2.48	68.9
DIAMOND	06-Jul-04	0.45	21.9	7.4	85	0.32	9.19	181		2.99	67.9
DIAMOND	19-Jul-04	0.31	28.7	13.5	175	0.30	9.93	137		2.31	50.8
DIAMOND	02-Aug-04	0.37	26.6	12.3	154	0.30	9.31	197		2.75	44.7
DIAMOND	16-Aug-04	0.20	23.8	15.9	188	0.29	8.43	331		3.89	36.3
DIAMOND	07-Sep-04	1.21	20.7	9.4	106	0.28	8.01	257		3.26	111.4
DIAMOND	27-Sep-04	0.38	18.4	12.5	133	0.29	7.61	210	21.7	3.13	45.9
	Mean	0.53		11.4	128	0.31	8.74	186	9.8	2.60	57.5
	Std.Dev.	0.28		2.36	34.1	0.02	0.78	62.3	10.3	0.71	24.1
	Summer Mean (May-Sept)	0.55		11.4	131.0	0.30	8.62	188.6	12.8	2.6	57.6

Secchi = Secchi Disc Transparency TP = Total Phosphorus TN = Total Nitrogen
 Sp. Cond = Specific Conductivity SRP = Soluble Reactive Phosphorus Chl-a = Chlorophyll a
 Note: Temperature, DO, DO%, Specific Conductivity and Ph are measured at the surface.



