



Minnesota Pollution Control Agency

520 Lafayette Road
St. Paul, MN 55155-4194

Spring Lake, St. Louis County

National Lake Assessment Project (NLAP)

Sample Date: June 28, 2007

Minnesota Lake ID: 69-0129

Area: 99 acres

Watershed Area: 9,697 acres

Ecoregion: Northern Lakes and Forests (NLF)

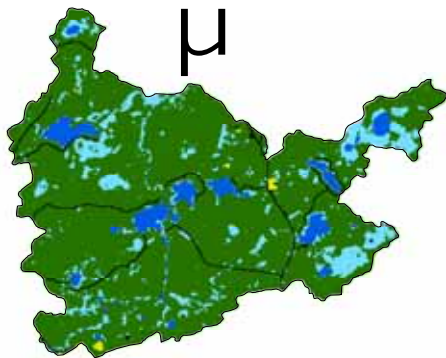
NLAP ID: 1347

Maximum Depth: 25 ft

Mean Depth: 15 ft



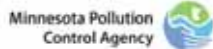
Spring Lake Land Use



0 0.5 1 2 Miles

Legend

- Developed
- Cultivated (Ag)
- Forest
- Water
- Wetland



Minnesota 2000 Level 1 Landsat Landcover

Classification.img

University of Minnesota Remote & Geospatial Analysis Lab

Land Use	Spring Lake Land Use %	NLF Typical Land Use %
Developed	3	0 – 7
Cultivated (Ag)	<1	<1
Pasture & Open	0	0 – 6
Forest	80	54 – 87
Water & Wetland	17	14 – 31
Feedlots (#)	0	

Spring Lake 2007 as compared to typical range for NLF ecoregion reference lakes. Single NLAP visit based on U.S. Environmental Protection Agency protocol as compared to typical range for summer-means.

Parameter	Spring Lake	NLF
Number of reference lakes	1	32
Total Phosphorus (µg/L)	12	14 – 27
Chlorophyll-a (µg/L)	5	4 – 10
Secchi Disk (feet)	8.9	8 -15
(meters)	2.7	2.4 – 4.6
Total Kjeldahl Nitrogen (mg/L)	0.6	0.4 – 0.75
Alkalinity (mg/L)		40 – 140
Color (Pt-Co U)	26	10 – 35
pH (SU)	8.0	7.2 – 8.3
Chloride (mg/L)	2.4	0.6 – 1.2
Total Suspended Solids (mg/L)		<1 – 2
Total Suspended Inorganic Solids (mg/L)		<1 - 2
Conductivity (umhos/cm)	121	50 – 250
TN:TP ratio	46:1	25:1 - 35:1
Microcystin(µg/L)	Near Shore	<10 Low Risk
WHO risk Category*	Index Site	10-20 Moderate Risk
	<0.15	20- 200 High Risk

* Guidelines for safe recreational water environments (World Health Organization, 2003)

µg/L = micrograms per liter
 mg/L = milligrams per liter

Pt-Co-U = Platinum Cobalt Units
 SU = Standard Units

umhos/cm = micromhos per centimeter

Mixing Status: thermally stratified (dimictic)

Temperature and Dissolved Oxygen Profile for Spring Lake. June 28, 2007.
 Temp (C) and DO (mg/L)

